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Integrated Service Technical Application

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Integrated Service Technical Application (ISTA)

Model: All

Production: All

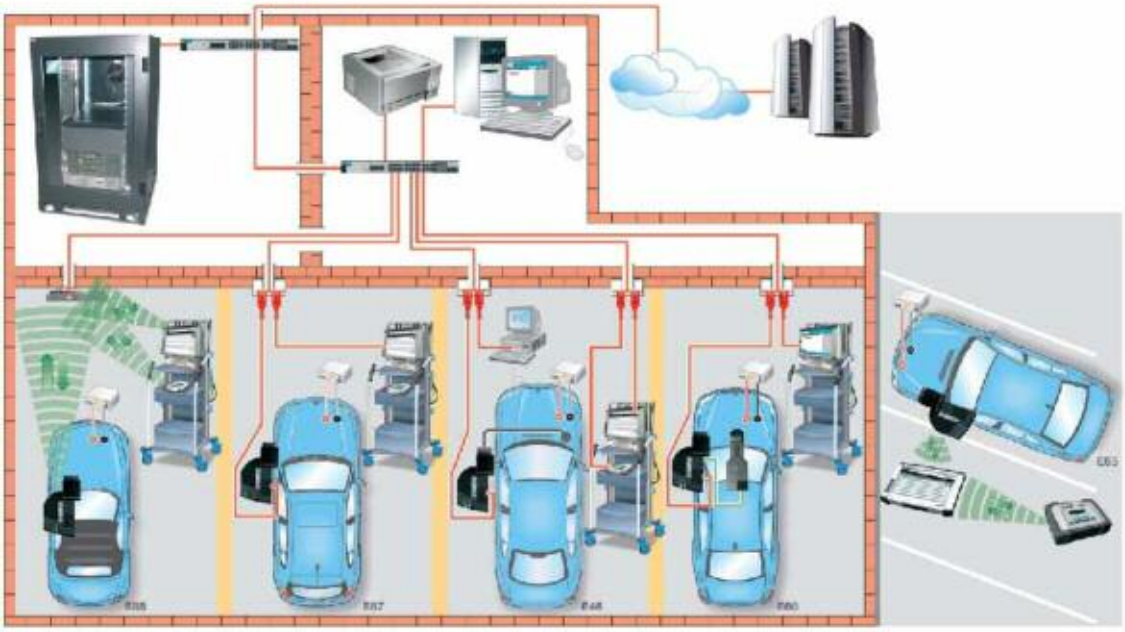
OBJECTIVES

After completion of this module you will be able to:

- Identify the components of the ISTA System BMW 3rd generation Diagnostic Equipment.
- Describe the operation and different functions of the ISTA System.
- Properly utilize the ISTA System to search for technical information related to the repair i.e. wiring diagrams, repair instructions, functional descriptions.
- Navigate and operate proficiently all aspects of the BMW 3rd generation Diagnostic Equipment.
- Properly diagnose BMW Group Vehicles using the ISTA System.

Introduction

ISTA or the ISTA workshop system consists of several functionally oriented system components that communicate with each other via LAN, WLAN and Internet. The entire system supplies up-to-date diagnostic data and information from BMW headquarters. The primary applications of the terminal devices are powerful diagnostics on the vehicle, with various options for vehicle identification for highly specific information searches and guided troubleshooting. The associated software is a client/server solution known as ISTA. The ISTA client software is installed on the Integrated Service Information Display (ISID) operator devices and the workshop PC. It communicates with the ISTA server software that runs on the Integrated Service Information Server (ISIS). ISID can operate temporarily offline and then be resynchronized later with the server. In a large dealer organization (HO) workshop, several ISIS may be present.



Note: For more information regarding ISTA, please refer to Dealernet and select: Menu>BMW>Aftersales Portal>Service>Workshop Technology and access the ISTA User Manual file. You can also type Workshop Technology in the search engine and that will prompt you to the correct web page.

Integrated Service Information Server (ISIS)

ISIS is the workshop server. In addition to other applications, the server-specific component of the ISTA software is installed on ISIS.

The workshop server is connected with BMW AG via an internet link. BMW AG makes the data available via the ISPA Broker and JET stream.

Integrated Service Information Display (ISID)

ISID is a mobile tester for workshop use integrated into the workshop network. The scope of delivery consists of a control panel, a base station and accessories. An ISTA client is installed on the ISID. The device can be operated “online” (in conjunction with the ISTA server) or “offline” (temporary interruption of connection with the ISTA server).

Integrated Measurement Interface Box (IMIB)

The IMIB is a powerful measuring instrument that is used in the BMW Group dealer organization. It contains several measuring units that can simulate the performance of an oscilloscope or a digital multimeter. The IMIB contains adjustable current and voltage sources which can be used as voltage and current supplies.

You can use the IMIB as a multimeter, even if not connected to ISTA, or execute more complex functions with ISTA. You can establish a link between ISID and IMIB via LAN or WLAN.

The IMIB can be operated in two modes in conjunction with ISTA:

- Interactively as a manually adjusted measuring instrument
- Embedded in test processes as an automated measuring instrument

With the manually adjusted measuring instrument you can make manual settings in the relevant masks once a connection to the measuring instrument system has been established. The results are displayed in the mask. For additional information, see IMIB section.

With the guided measuring instrument, the measuring instrument system is automatically adjusted via program instructions in the test sequence. The results are displayed in specific masks and evaluated by the program.

Integrated Communication Optical Module (ICOM)

ICOM is a communication device and constitutes the diagnostic interface to the vehicle. It is connected to the vehicle and can be linked to an ISID via a connection manager. Thus ISID can communicate with the vehicle, e.g. for automatic vehicle identification, or for executing test programs.

Integrated Service Access Point (ISAP)

ISAP is a communication device (Access Point) for linking WLAN-capable devices to the workshop network.

Personal Computer (PC)

You can also install an ISTA client on a PC or a workshop PC, for example. As these devices are fixed, a PC is primarily suitable for information searches.

Printer

Approved and standard commercial network printers are used for printing jobs.

ISTA Operating Modes

HO Workshop Mode

In the HO workshop mode, the terminal devices can be operated both “online” (default) as well as “offline”.

Online

In this operating mode, the client and the workshop server are located in an HO workshop and are connected via the local workshop network (LAN, WLAN). An online connection to BMW AG is established. ISTA software can be operated on a mobile ISID and/or a stationary workshop PC.

The online link not only supports the prompt update of ISTA data and software, but also provides access to data from other systems at BMW headquarters. Data access usually occurs in the background when certain functions are accessed.

Offline

In this mode, the client is temporarily separated from the workshop server. For example, this is necessary if the ISID is used on a test drive with the vehicle. The changeover from online to offline mode and back again is performed by the Workshop Management System (WSM). Once the client is online again, the software synchronizes itself automatically with the workshop server. The same thing happens if the server crashes and is available again at a later point in time.

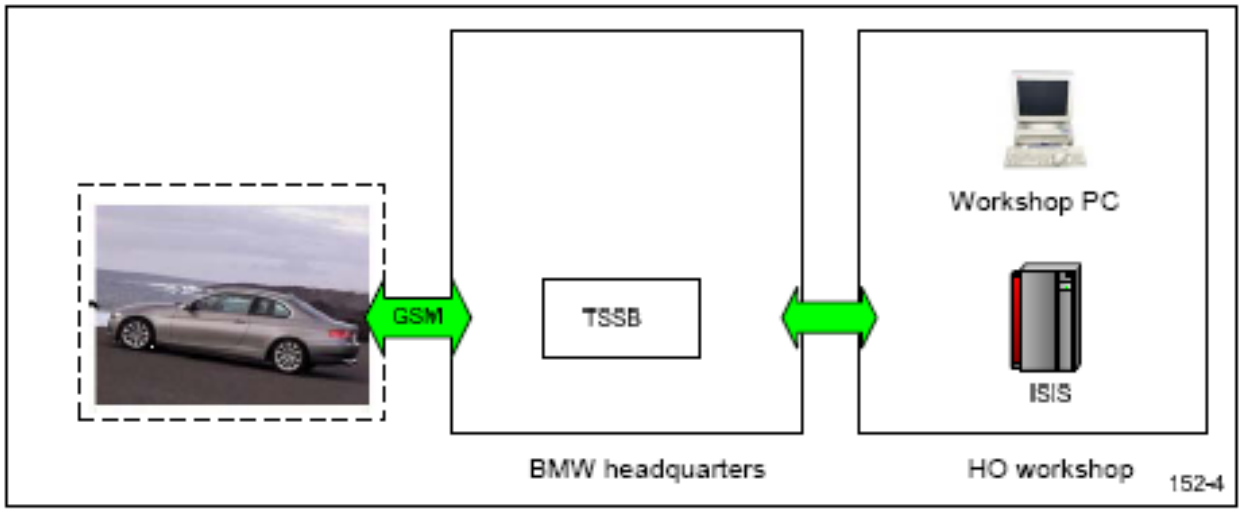
TeleServices

In the “TeleServices” operating mode, communication with the vehicle is performed via the mobile phone network (GSM). The vehicle transmits a service call to the central TeleServices switchboard (TSSB) either automatically triggered by Condition Based Service (CBS) scopes or manually by the driver. In the process additional fault memory data and control device information is transmitted in the form of a file. This data is transmitted to the home dealer of the customer via the TSSB and can be read out there with ISTA.

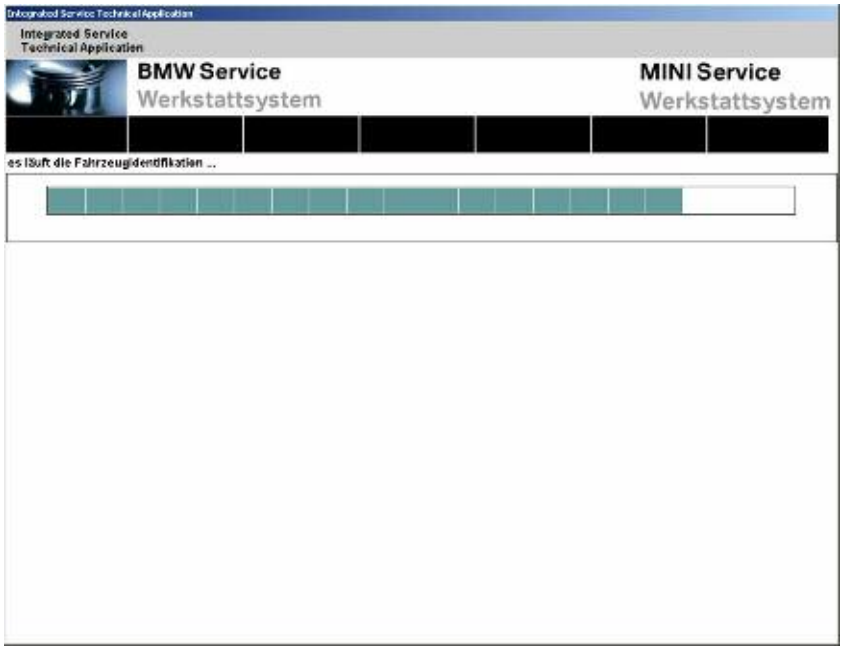
This option is only available if the application for ISPA service advice and order control has been installed on ISPA. ISTA is then called up in the “TeleServices” operating mode by the service advisor from the ISPA Client. The first mask that is displayed in ISTA after it is called up in this mode is the fault memory list of the identified vehicle.

Only limited ISTA functions are available in the “TeleServices” operating mode. No direct link is established with the vehicle at any time.

TeleServices components



TeleServices on workshop PC (no current screenshot)



After the data has been read out, the “Fault memory” mask is displayed. From here a test plan can be accessed. You can now search for information objects.

Data Exchange with Other Systems

ISPA Broker

Score Broker is an online interface with BMW AG. It enables the calling-up of information on technical actions, fault patterns (Customer's own words/Customer's quote, qualified), vehicle details, repair history and vehicle rundown. The information is integrated into the respective masks and requires an online connection of the ISPA Broker to BMW AG. (Not yet in US)

JET Stream

JET stream is an online interface to BMW AG. It provides updated software (content and system packages) and transmits nonprocedurally defined data to the vehicle description module (FBM) at BMW AG. The information is integrated into the respective masks and requires an online link to BMW AG.

Distinguishing Different Makes

The user interface is standardized for the BMW, MINI and Rolls-Royce brands. The various brands - depending on the authorization of the respective business - can be identified by the different colors of the active objects in the display. A marked object is thus highlighted on the screen in the respective brand color. Furthermore, depending on authorization level, the brand in the header of the start mask will be displayed as text.

Colors and logos are listed in the table below:

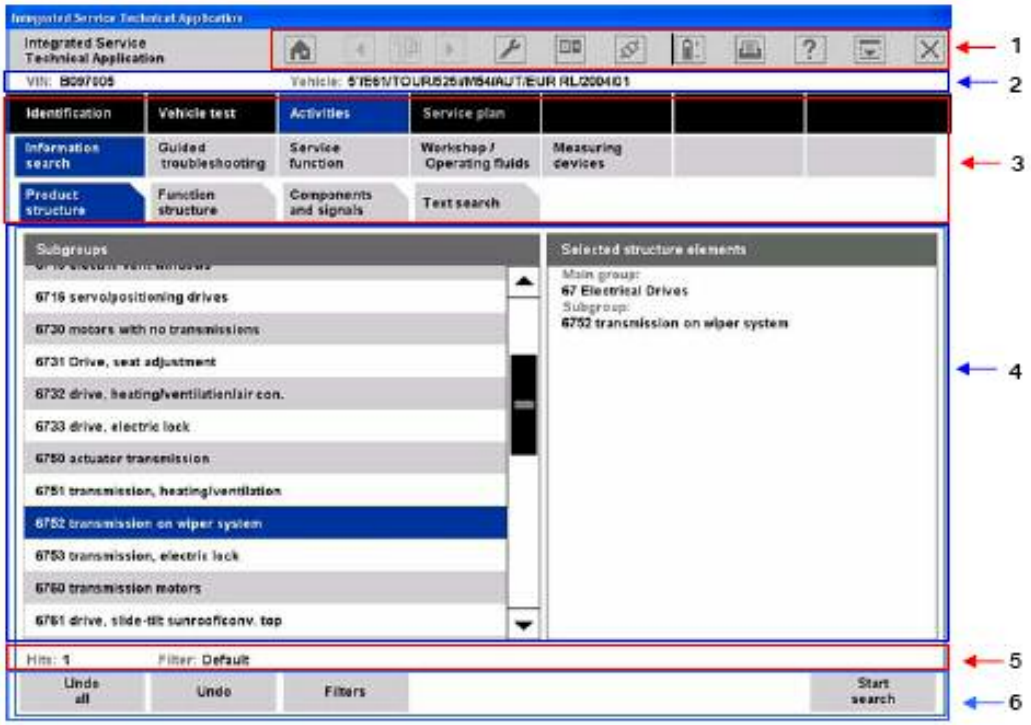
Brand	Logo left	Logo right	Color
BMW Group Multi-brand dealers	BMW Service Workshop System	MINI Service Workshop System	turquoise
BMW	BMW Service Workshop System		blue
MINI	MINI Service Workshop System		orange
Rolls-Royce	Rolls-Royce Motorcars Service Workshop System		chamois

General Operation of the ISTA Workshop System

The graphic displays on the screen are known as “masks”. These contain information and control functions that enable the user to operate the ISTA workshop system.

The masks normally have a standard structure. They are divided into the following sections:

1. Symbol bar
2. Header
3. Navigation area
4. Content range
5. Comment line
6. Action line



Symbol bar

The symbol bar is visible in all masks. The functions that can be called via the individual symbols are described in the ISTA Menu Structure Chapter.

Header
The vehicle identification number and the basic features of the identified vehicle are displayed in the header. The vehicle identification number is only displayed if the vehicle has been identified by entering or reading out its vehicle identification number.

Navigation area
You can navigate among the individual functions of the workshop system using the:

- ◊ main menu (first line)
- ◊ submenu (second line), and
- ◊ tabs.

The selected menu items or tabs are marked in the appropriate brand color.

Content range
This is where you will find further selection options and information. A white arrow pointing up or down identifies the column that is used for sorting a selection list.

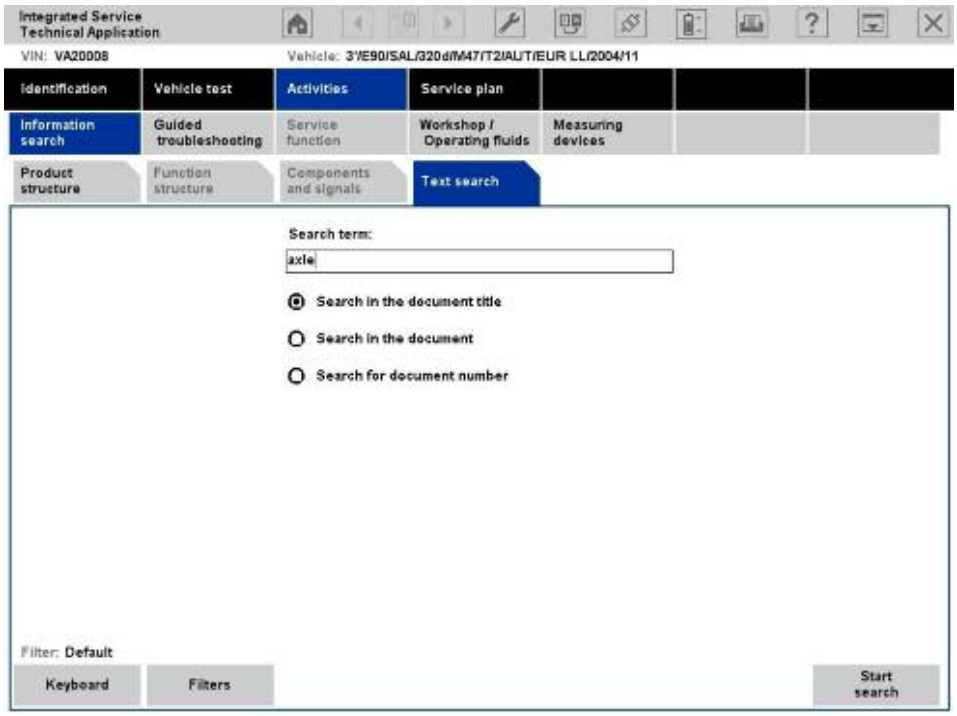
Comment line
The bottom part of the content range may also contain a comment line in which you will receive additional information.

Action line
Various buttons are shown here according to the content range.

Options for text entry (on-screen keyboard)

In various masks, it may be necessary to enter text or characters. In general, this can be done using the PC keyboard. By clicking on the “Keyboard” button you can fade in the so-called “on-screen keyboard”. Only keys that are necessary to make valid entries at the respective function step are enabled on the on-screen keyboard. Impermissible characters cannot be selected with the on-screen keyboard.

A second click on the “Keyboard” button hides the on-screen keyboard.



On-screen keyboard: Entering search terms

Quick System Overview

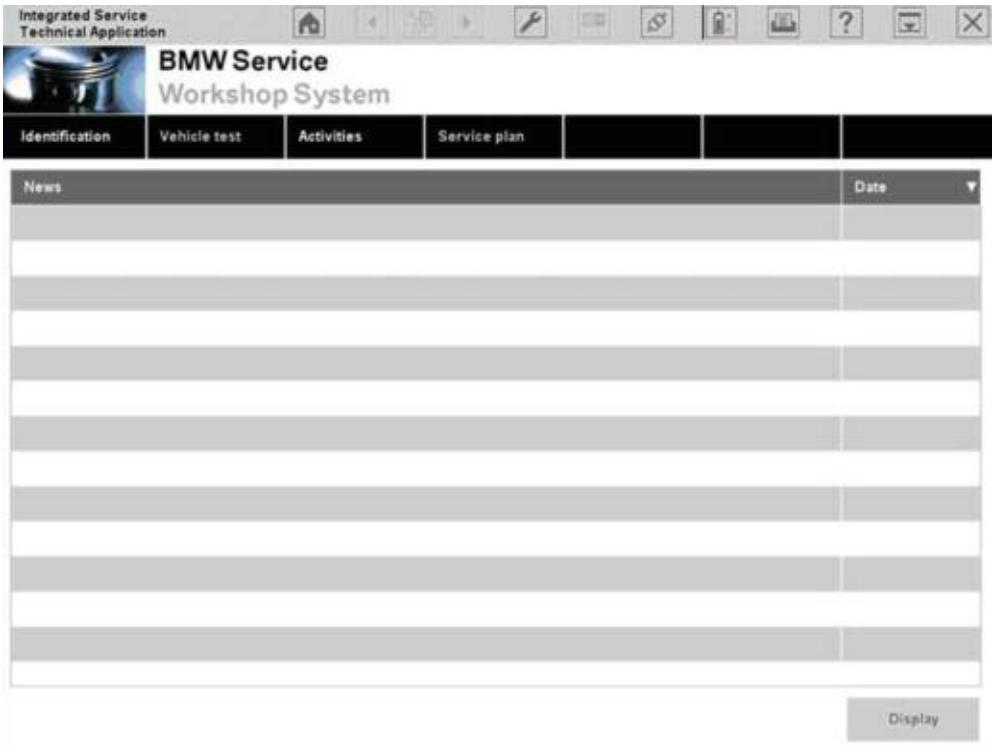
Starting the ISTA Client

How to start the ISTA Client:

- ◊ Double-click the symbol on the Windows desktop (if displayed) ; or
- ◊ Open the application in the program file by selecting “Start – All Programs – ISTA – ISTA Client”; or
- ◊ Open the application by selecting the corresponding entry on the central start page on the ISID.

After selection, the start mask appears a list of news will be displayed. You can set the display period in Administration.

If the date has changed since the last time the system was activated, the “ISTA usage notes” will be displayed. After reading the note, close the pop up window by clicking the “Continue” button.



You can initiate an identification procedure from the start mask.

► To initiate an identification procedure for a vehicle:

- ◊ Select the “Identification” menu

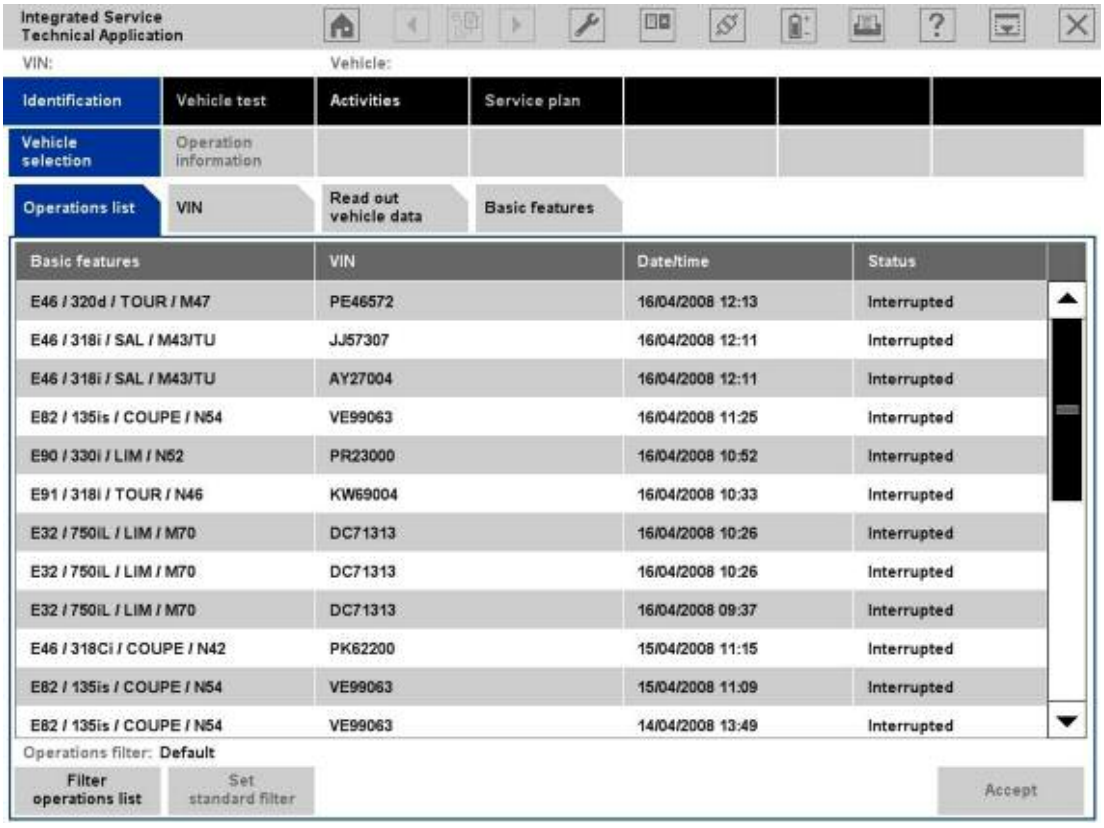
Checking the Operations List

Note: In the “Central/online” operating mode (OSS and TeleServices), the “Operations list” tab is not available for technical reasons. Proceed with next section.

After you have selected the “Identification” menu from the start mask, the workshop system switches to the “Operations list” tab.

Each identification session generates a “procedure” that is automatically initiated and administered by the workshop system for vehicle identification. At the end of the session an operation is closed via a pop up. The user can thus choose whether he wants to terminate or interrupt the operation. Depending on the option selected, an operation is concluded via a pop up, assigned a status (“terminated”, “interrupted”) and entered into the operations list for a certain period. Saved procedures can be reopened from the operations list.

Additional information is available in the “ISTA Menu Structure” section.



Operations list

The selection of an existing procedure is not suitable for the “Short introduction” provided here. Therefore change to the “Read out vehicle data” tab.

Selecting a Vehicle

There are four options for initiating vehicle identification:

◊ by selecting an operation

◊ by entering a vehicle identification number

◊ by reading out the vehicle data, or

◊ by selecting basic features.

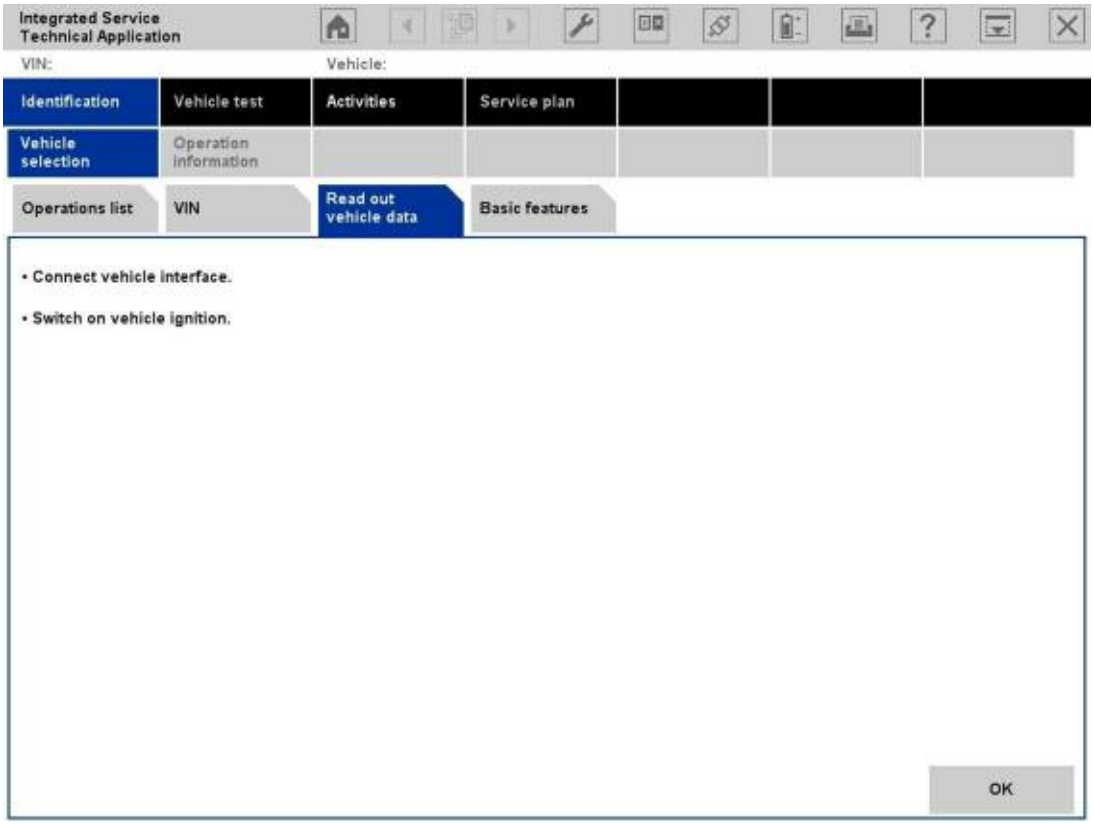
The most reliable way to identify a vehicle is by reading out the vehicle data from a connected vehicle.

► How to identify a vehicle by reading out the vehicle data and automatically creating an operation to do this:

◊ Click the “Identification” main menu item in the navigation area.

◊ Select the “Read out vehicle data” tab and follow the instructions provided.

◊ Click the “OK” button.



Preparations for reading out vehicle data

After a short interval, the connection manager appears.

Selecting a Diagnostic Connection to the Vehicle

The ISTA communication devices from the HO workshop are entered into the content range of the connection manager.

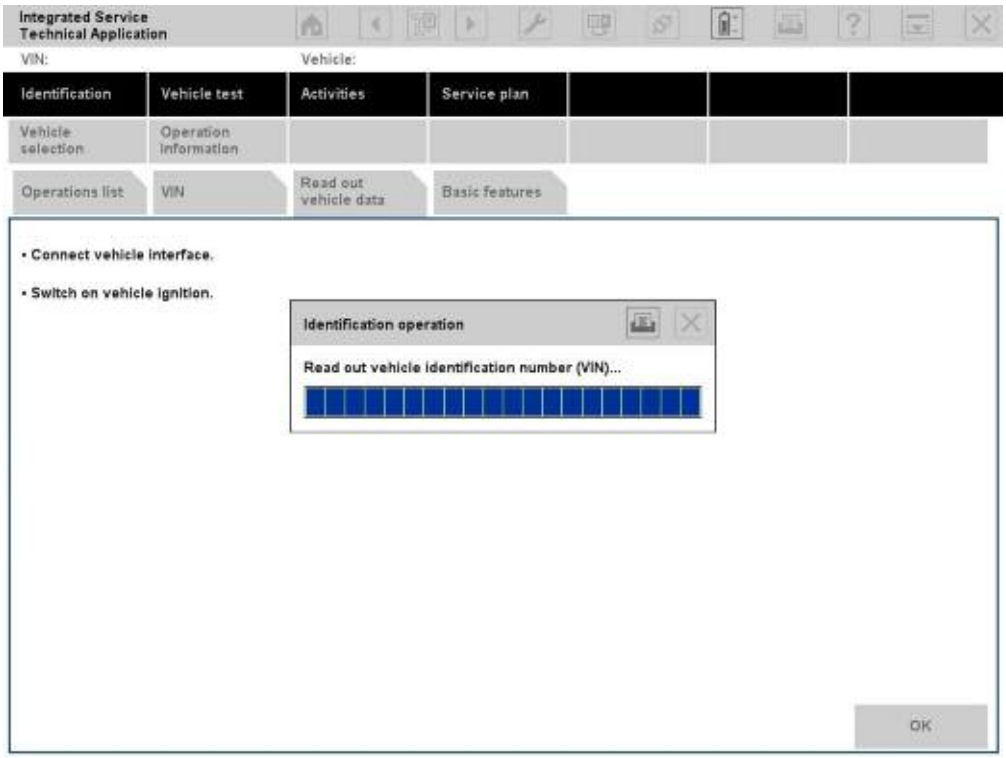
► How to select the communication device:

◊ Determine which ICOM is connected to the vehicle to be identified.

◊ Select the appropriate components in the connection manager and click the "Set up connection" button.

Connection manager

After the “Set up connection” button is selected and clicked, the connection will be set up. The tester performs a vehicle identification. To do this, it reads out the vehicle identification number from the vehicle. The progress of the identification procedure is displayed on a progress bar.

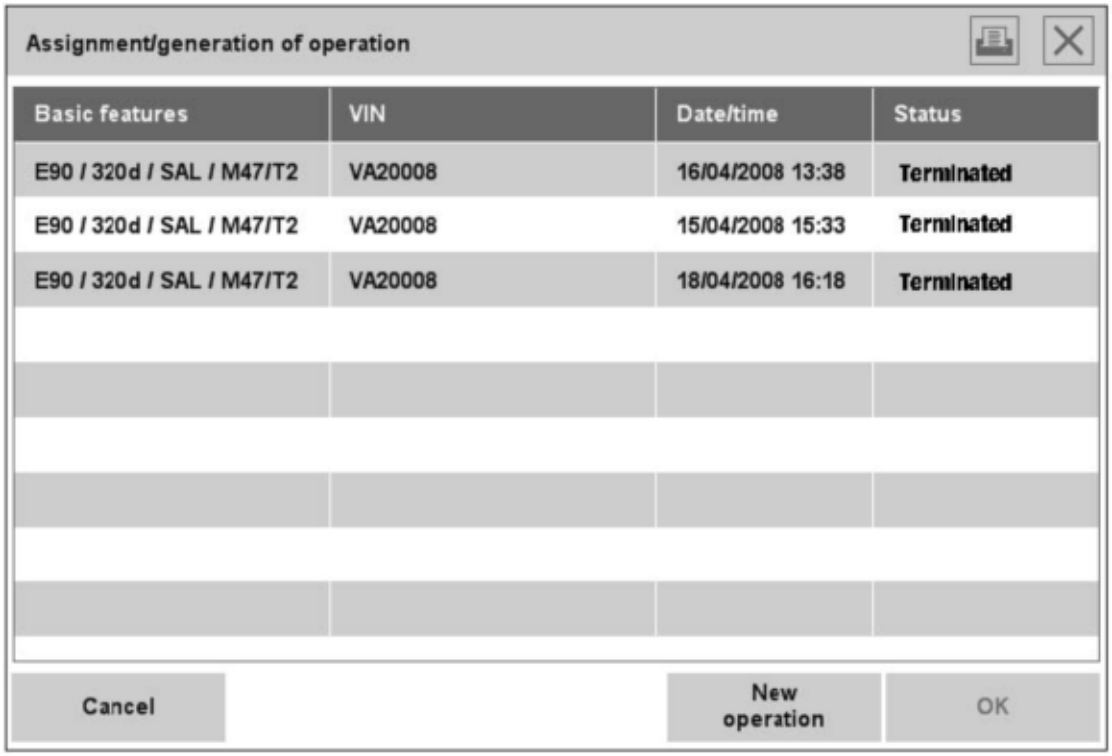


Identification procedure

Creating an Operation

After the identification procedure, the workshop system tries to uniquely assign the operation to an existing operation. If this does not succeed, it automatically creates a new operation and switches over directly to the “Operation details” mask.

If operations with the same identification features are already available in the workshop system, these will be offered for selection in the “Assignment/generation of operation” list.



Creating a New Operation or Selecting an Existing Operation

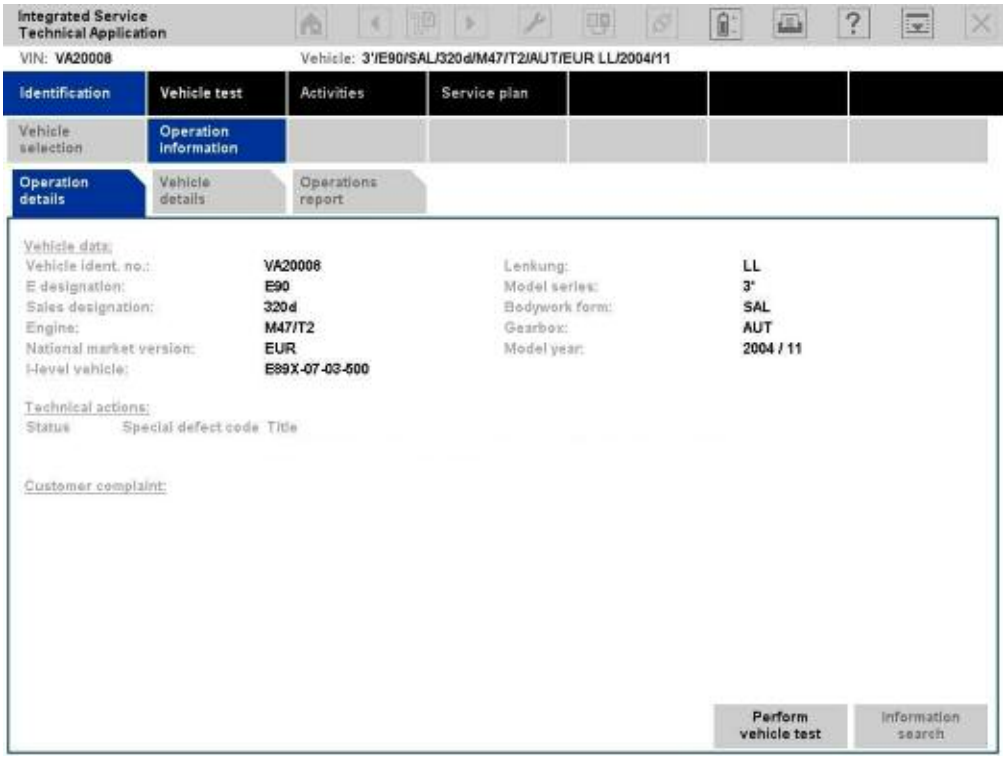
► How to assign an operation:

◊ Select an existing operation or click the “New operation” button.

◊ Click the “OK” button.

If no unique assignment is produced (e.g.: the other operation is open or several suitable operations are available), a corresponding pop up is displayed.

Additional information is available in “ISTA Menu Structure Chapter” under Operation details (without an online connection to BMW AG).



Operation details for “Technical actions” and “Customer complaints” require an online connection to BMW AG.

You can specifically search for various types of information via the “Search for information” button.

You can start the vehicle test by clicking on the “Perform vehicle test” button.

Perform Vehicle Test

The vehicle test runs automatically the first time for each operation. During the vehicle test, the “Control unit tree” submenu is displayed by default. Alternatively you can switch to the corresponding list of control devices by selecting the ”Control unit list” entry from the submenu.

The control unit tree displays the maximum number of control units installed in a vehicle, and their assignments in the respective bus system, in the form of a chart. At the beginning of the vehicle test, the rectangular symbols are not colored. Non-installed control units in the identified vehicle are shown in gray in the display. Currently processed (or selected) control units are displayed in the color of the mask.

While the vehicle test is being performed, you can follow its progress on the screen as the displayed symbols are updated in real-time.

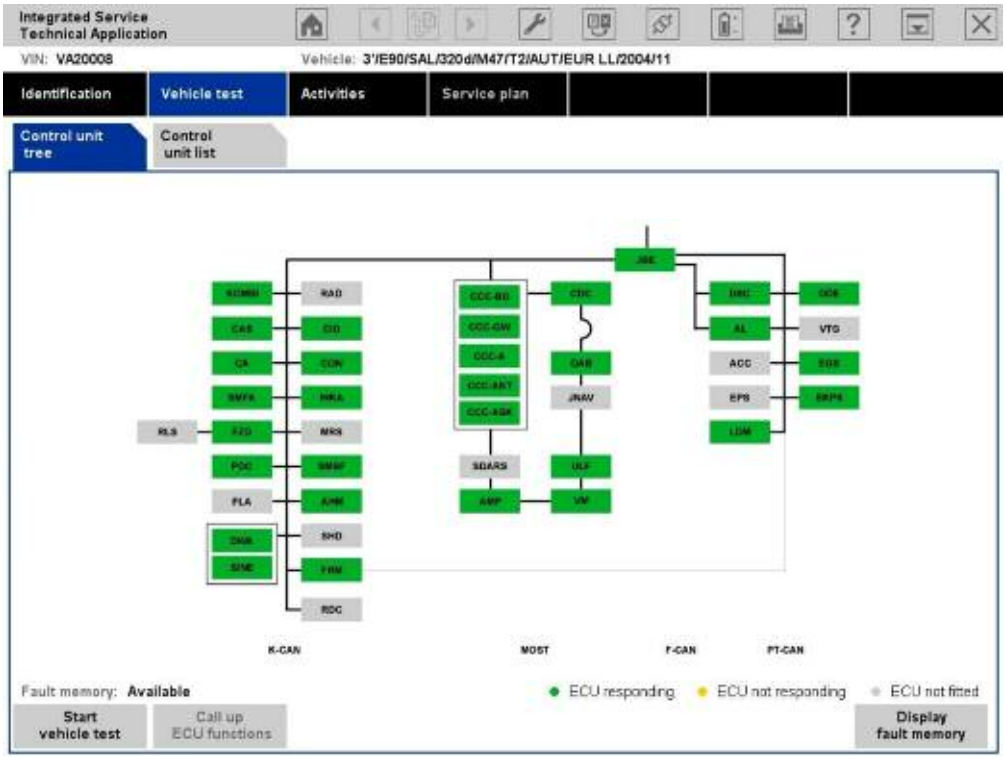
From this mask, you can if required restart the vehicle test or also call up control unit functions so that you can read out measurements or activate actuating elements.

Before you can access a test plan you must first display the fault memory.

► How to view the fault memory:

◊ Wait until the vehicle test is completed.

◊ Click the “Display fault memory” button.



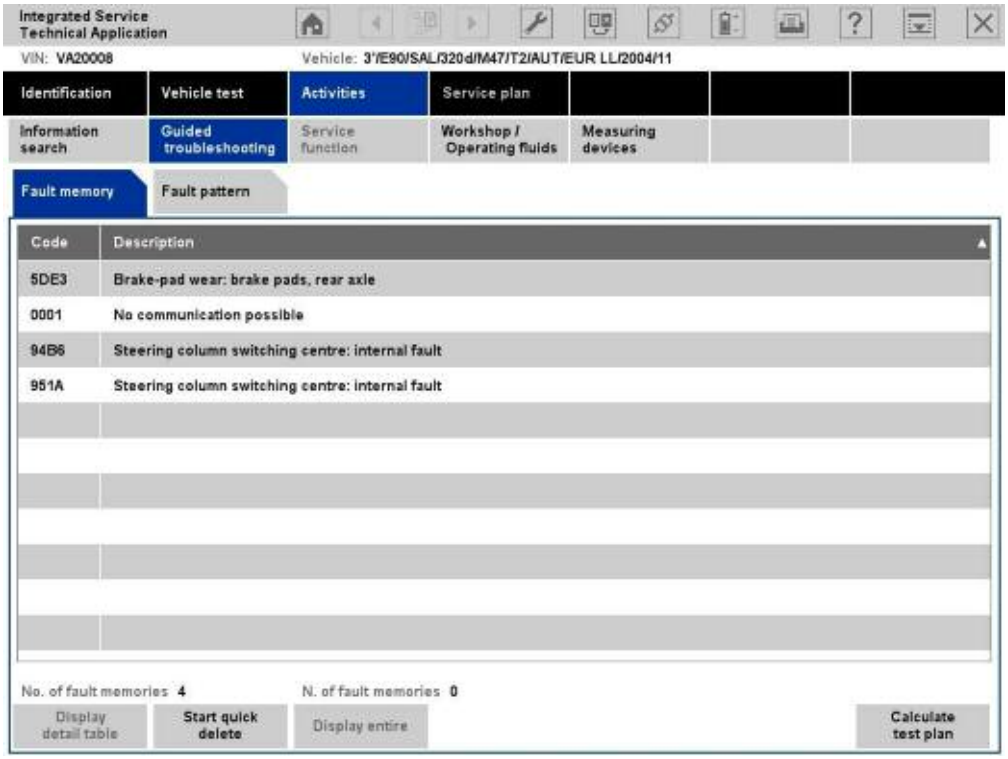
Control unit tree at the beginning of the vehicle test

Display Fault Memory

After the vehicle test, go to the “Fault memory” mask. The read-out fault codes and the associated description will be listed. From this mask you can calculate a test plan.

► How to calculate a test plan:

◊ Click the “Test plan” button.



Display fault memory

You run the “Start quick delete” function when the guided troubleshooting is completed. You can find details about this function in Fault Memory section.

Editing a Test Plan

The test plan lists the suspected components and functions.

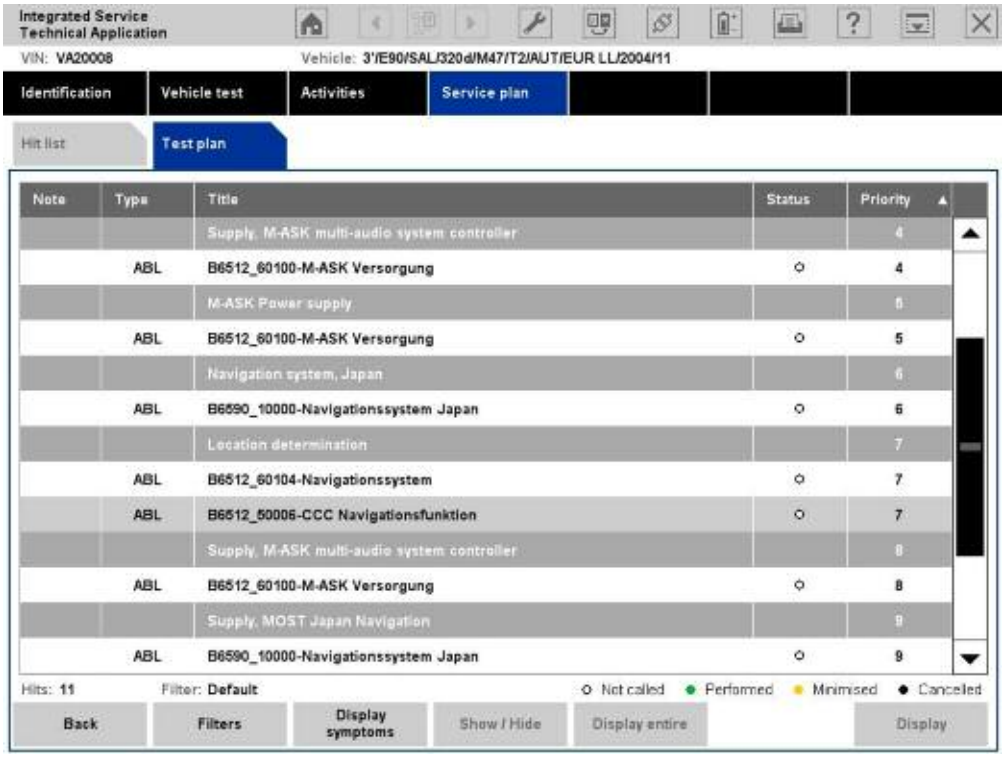
The individual suspected components and functions are presented in white lettering against a dark background. Underneath them the appropriate documents and procedures are listed in black lettering against a light background (indicated in the “Type” column with “ABL”).

Procedures localize a fault and provide advice on rectifying it.

► How to start a procedure:

◊ Select the required procedure from the test plan.

◊ Click the “Display” button.



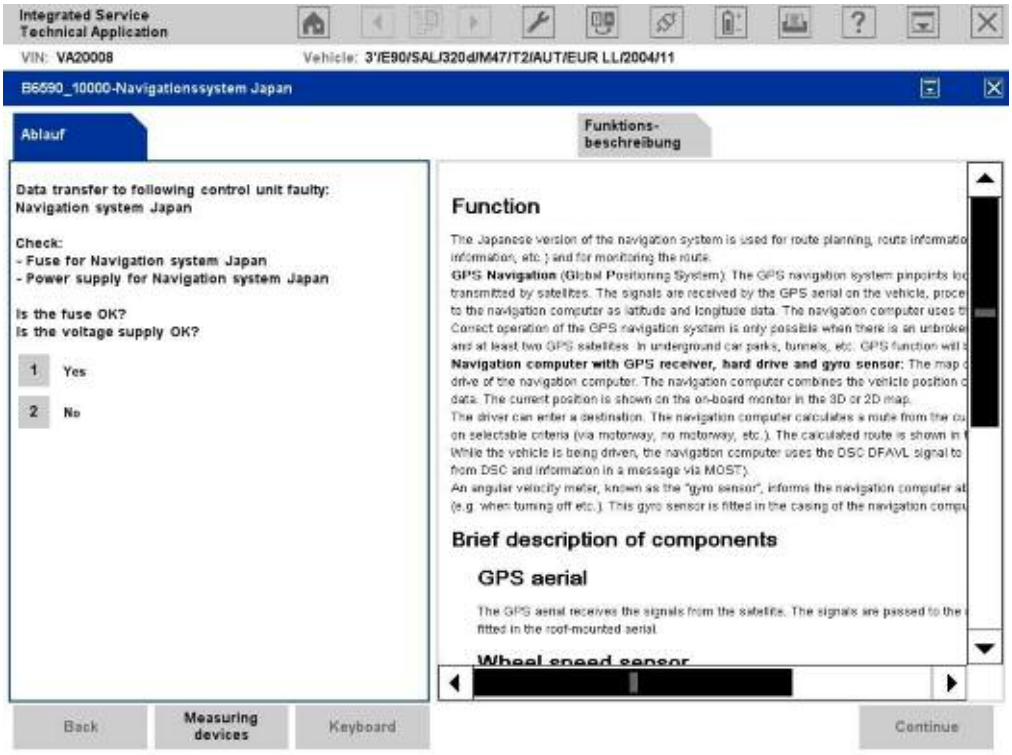
Test plan

Running a Procedure

A procedure (service program) is primarily designed to identify the cause of a fault. Further-more, service functions can be performed via procedures. Information can be displayed within a procedure, as well as measurements read out or entered. Furthermore, queries can be made available via selection screens.

After a procedure has been carried out, additional information will be added to the test plan, if this turns out to be necessary for further fault search or fault rectification. In the test plan, you can select and start another procedure.

The following mask gives an example of a question with the options “Yes” and “No”.



Example of procedure and “Question” (no current screenshot)

After the test plan has been completed, you should execute the “Quick delete” function.

Terminating an Operation

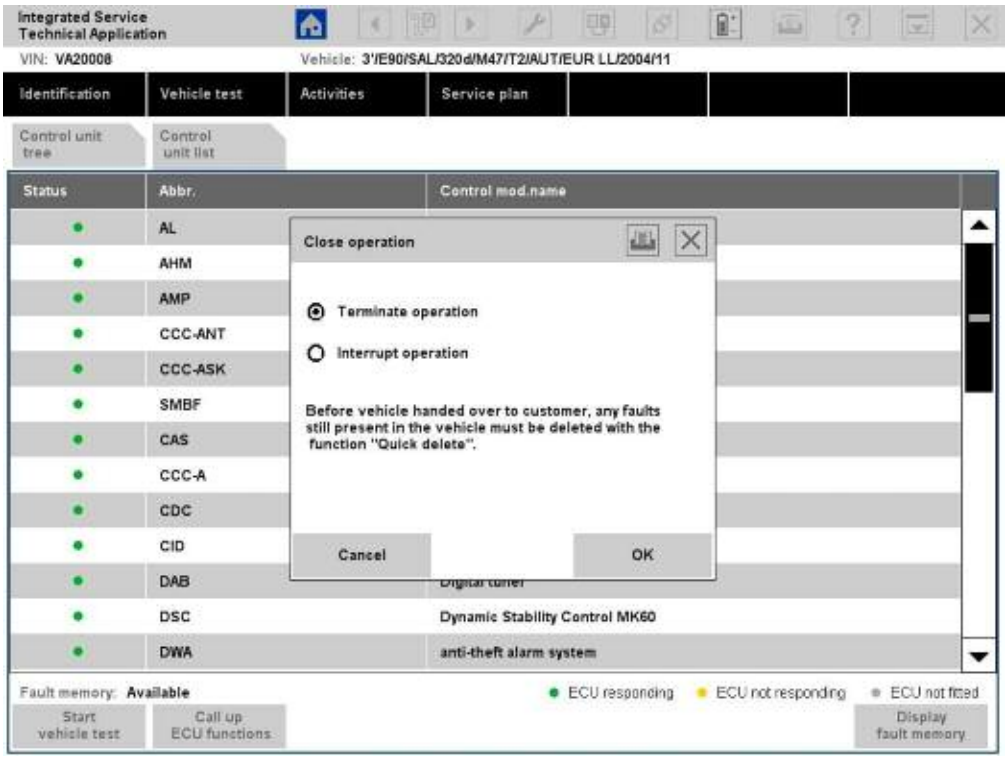
You can terminate an operation either by:

◊ Clicking the “X” symbol

◊ Identification of a new vehicle, or

◊ Calling up the start mask via the symbol with the same name.

In any case a dialogue will be displayed, showing options on how to terminate the operation.



“**Close operation” dialogue**

► How to terminate the operation:

◊ Click on the “Start mask” symbol.

◊ For example, select the “Terminate operation” option.

The procedure will now be included in the operations list.
You can if required reopen it there.

ISTA Menu Structure

For a quick overview and a rapid introduction to ISTA, you will find a brief description of the guided diagnosis in the Introduction Chapter of this training information.

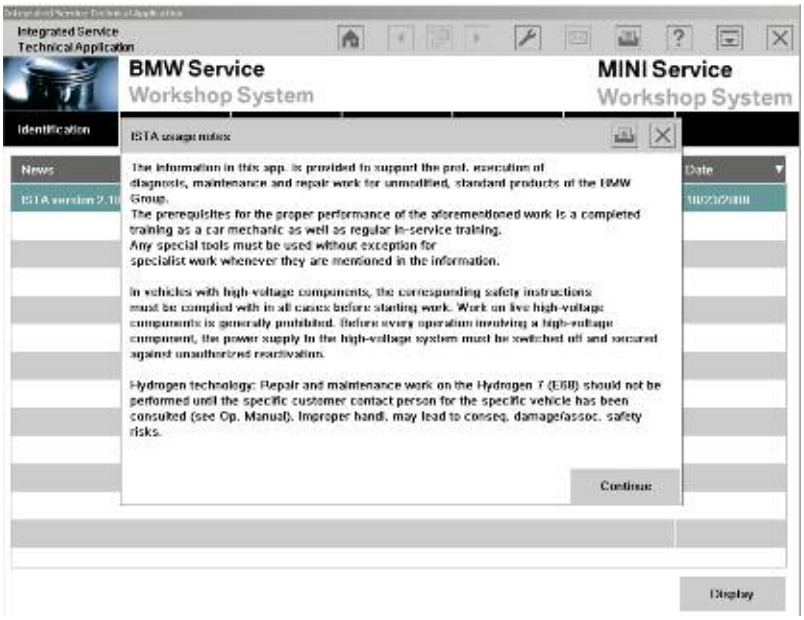
The following chapter provides more comprehensive overview of the ISTA workshop system's menu structure. This chapter describes the menus, masks, and buttons in detail.

This section will walk through step by step the operation and different features and functions of the system.

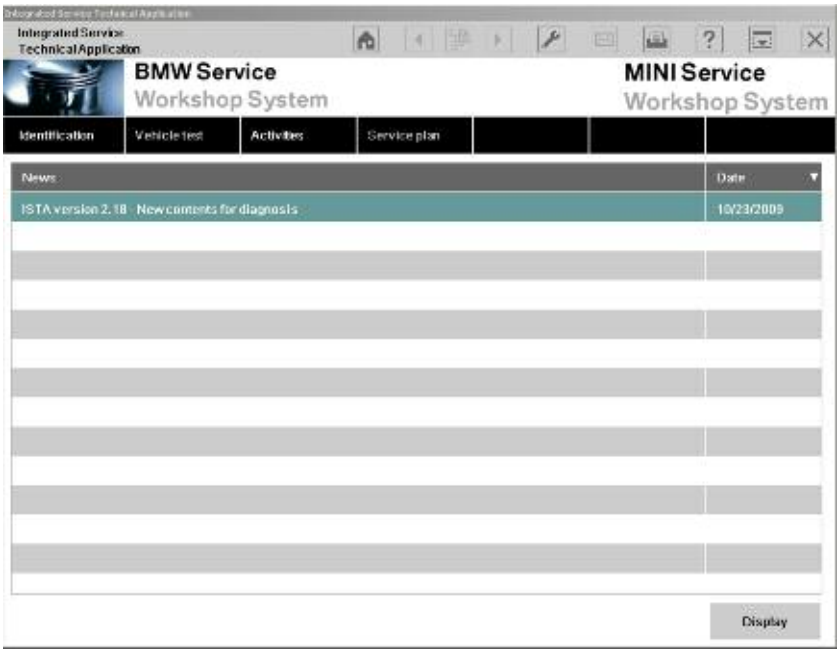
Start Mask

When you access the ISTA workshop system, initially the start mask appears. Once a day a window appears when the system is booted up displaying the “ISTA usage notes”.

After reading the note, close the pop up window by clicking the “Continue” button.



ISTA usage notes pop up



ISTA Home page

In the start mask you can:

◊ read new items.

◊ access standard functions via the symbol bar.

◊ access “Identification” main menu and initiate an operation.

◊ access the main menu “Activities” and search for vehicle-specific information.

When working on a vehicle and going through the main menu using the menu items “Identification”, “Vehicle test”, “Activities” and “Service plan”, you normally work from left to right.

Displaying New Items

The content range of the start mask contains a multicolumn listing of news from BMW headquarters.

The columns have the following meanings:

◊ News: shows the titles of all available news items.

◊ Date: shows the date on which the news item was last edited. When the start mask is opened, the news items are sorted by date, with the most recent entry at the top. You can delete older news items to make the list shorter.

► How to change the sorting sequence:

◊ Click the column header with an arrow symbol in the start mask.

► How to change the order using another column:

◊ Click another column header. The arrow symbol jumps to the corresponding column.

The new order is retained until you quit the start mask.

► How to access a news item:

◊ Click a news item. The selection bar jumps to the corresponding line. The “Display” button is activated.

◊ Click the “Display” button. The selected news item is displayed.

◊ Click the “Close” button, to return to the start mask.

Identification

A vehicle can be identified with any of four approaches. During identification, to assure unique assignment of the diagnostic session, a new procedure will be created or an existing one used.

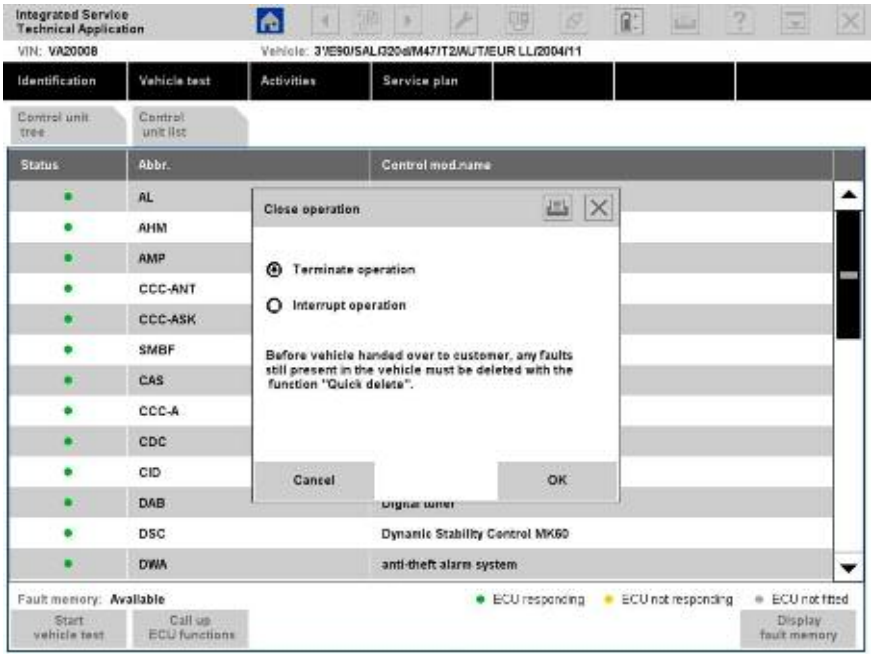
You can obtain detailed information on administering procedures in the “Background information on the procedure” section.

Vehicle Selection

Before you can work with a particular vehicle, you must initiate an operation. The first step is to select the vehicle

► How to start the vehicle selection:

◊ Click the “Identification” main menu item in the navigation area. If you do this from the start mask and have previously created operations in the workshop, then the “Operation details” tab is automatically selected. If you have selected the “Identification - vehicle selection” menu from an open operation, the workshop system changes over to the “Operation details” tab and displays the “Close operation” query.



“Close operation” dialogue

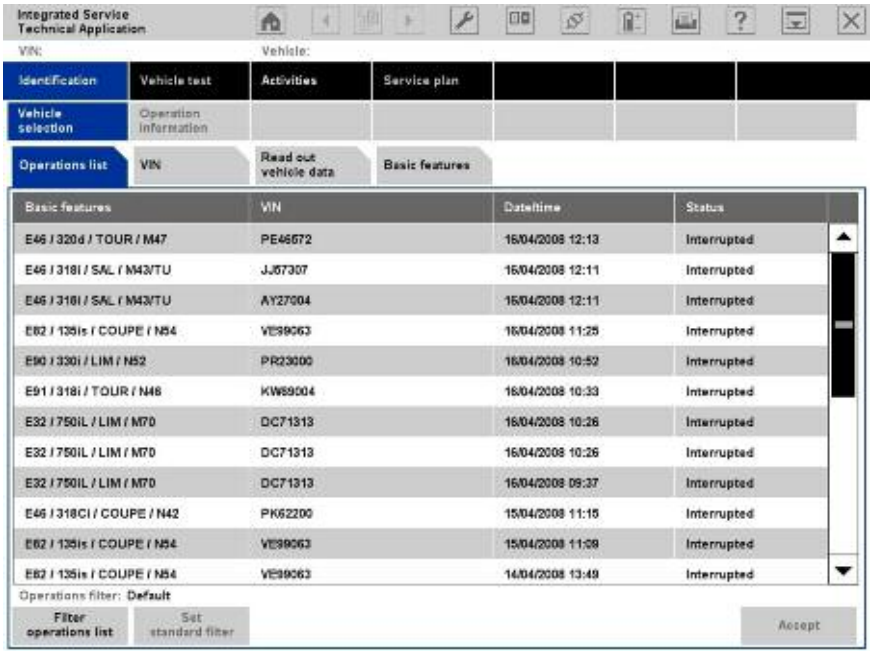
◊ Decide whether the ongoing operation should be terminated or interrupted.

Operations List

In general, the vehicle identification /operation administration tries to uniquely assign an existing procedure or independently generates a new one. If no unique assignment is produced (e.g.: the other operation is open or several matching operations are available) the “Assignment/New” pop up or even the “Decision Operation/ VIN” pop up is displayed.

Note: In the “Central/online” operating mode (TeleServices and OSS), the “Operations list” tab is not provided because there is only ever one operation there.

The operations list is automatically brought to the front when you select the “Identification” menu from the start mask. The prerequisite is that procedures are already available in the “New”, “Interrupted” or “In progress” statuses. Terminated operations do not become visible until the adjustable filter has been set accordingly.



“Operations list” tab

The operations list shows a table of all previously completed operations depending on the filter settings and the time elapsed.

The table columns have the following meanings:

- ◊ **Basic features:** shows the basic features that are saved with the operation.
- ◊ **Vehicle identification number:** shows the vehicle identification number read out of the vehicle. Reading out the vehicle identification number is part of the vehicle identification procedure. It can also be automatically determined at a later stage with the identification via Basic features with a vehicle test.
- ◊ **Date/Time:** shows the date and time at which the operation was first saved.
- ◊ **Status:** shows the status of the operation. A distinction is made among the following statuses: - New operations (new) - Interrupted operations (interrupted) - Ongoing operations (in progress) - Terminated operations (terminated).

The table is sorted by default according to the “Status” column.

Note: You can obtain background information on the “Operation” section of this training material.

Filtering the operations list

In the “Enter filter criteria” field, you can enter a basic feature, a VIN or a date. To do this use the on-screen keyboard. If you wish to enter several filter criteria, separate them from each other using space characters and/or check one or more selection fields in the “Status” area.

Confirm the input with the “OK” button. The “Filtering operations list” window closes and the workshop system returns to the operations list. The “Cancel” button closes the window without changing the settings.

“Filtering operations list” window

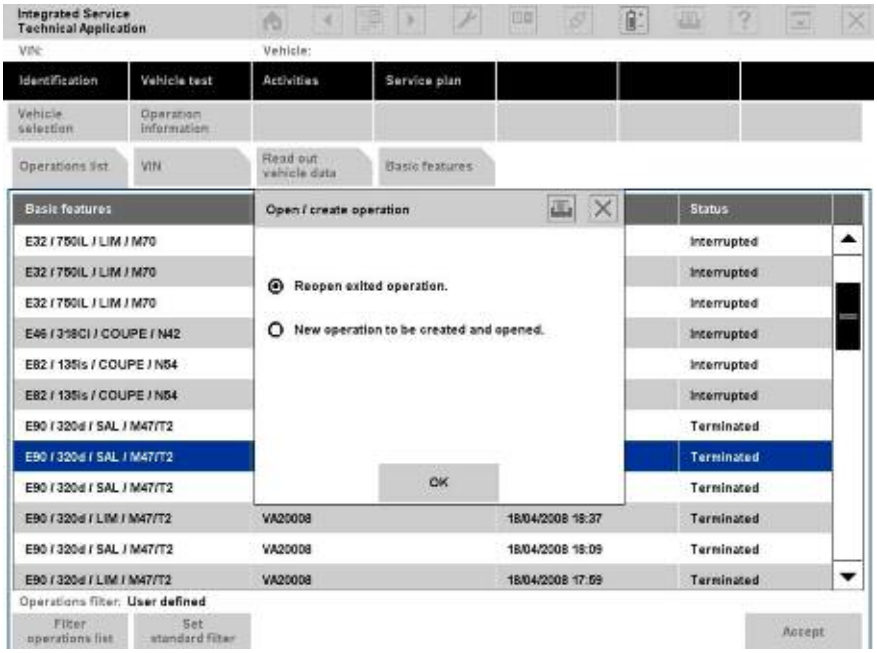
► How to display “terminated” operations in the operations list:

◊ Click the “Filter operations list” button. The “Filtering operations list” window opens.

◊ Mark the “Terminated” option and click “OK”.

The following buttons are available in the action line:

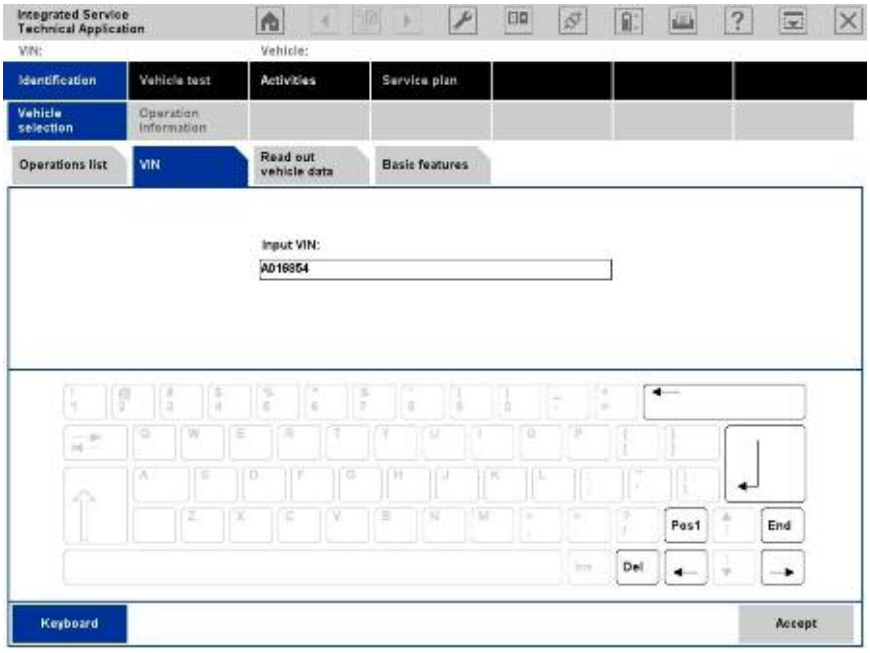
- ◊ **Set standard filter:** This button resets the filter to the default settings; no filter criteria, and only operations with “New”, “In progress”, and “Interrupted” status are displayed in the corresponding sequence.
- ◊ **Accept:** Opens the selected operation. If you have selected an operation that has been terminated, a dialogue appears in which you can decide if this operation should be reopened or if a new operation should be created and opened.



“Open/create operation” menu

Vehicle Identification Number

If you select the “Identification” menu from the start mask, the “VIN” (Vehicle identification number) tab will be automatically selected. Only the last seven characters are required when entering the vehicle identification number. You can use the on-screen keyboard for making entries.



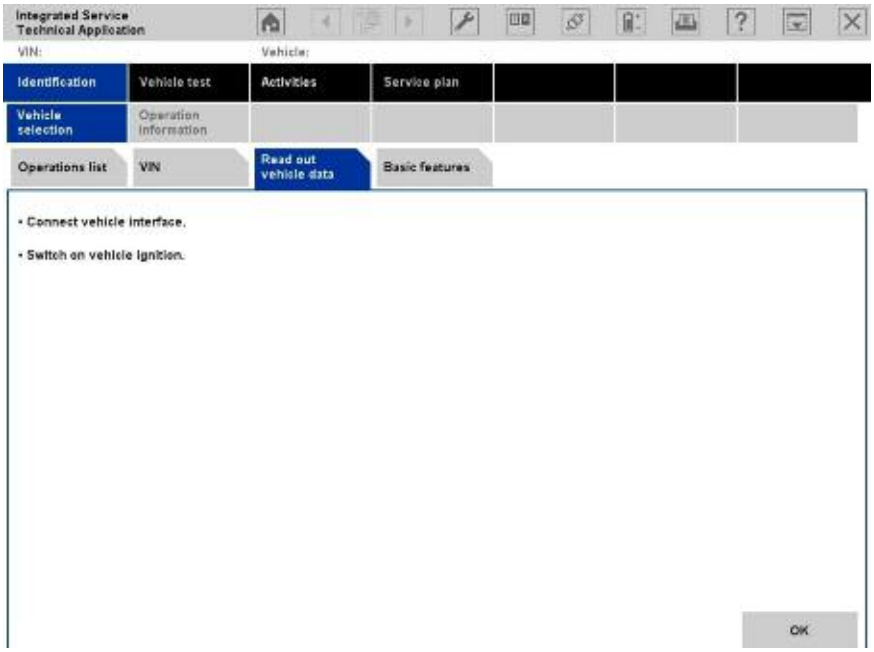
“Vehicle identification number (VIN)” tab

Confirm the input by clicking the “Accept” button.

After the vehicle identification number has been entered the ISTA workshop system checks whether an operation with this number already exists. If a corresponding operation exists, you can select it and thus continue or create a new operation. If no suitable operation exists, a new operation will be generated automatically. The associated basic features and other identification data will then be read out of the server database. The workshop system changes over to the “Operation details” mask.

Reading Out Vehicle Data

The VIN can be directly read out from the vehicle by using “Read out vehicle data”. First, the prerequisites are displayed.



Prerequisites for vehicle identification

► How to read out vehicle data:

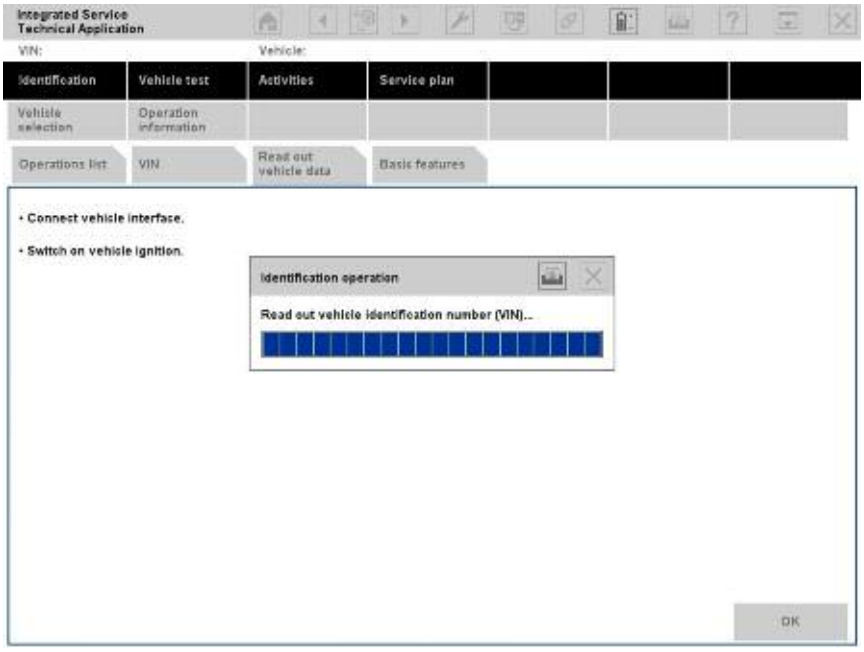
◊ Click the “Read out vehicle data” tab.

◊ Connect a vehicle interface (ICOM) to the vehicle.

◊ Switch on the ignition.

◊ Click the “OK” button. The request begins with checking the existing connection and continues with the vehicle identification via the VIN readout. During this time, a progress bar will be displayed on the mask.

Identification Operation



After reading out the VIN the workshop system checks whether an operation with the same VIN is already on the operations list. If this is the case, the operations list will be displayed to select an existing operation. Otherwise a new operation will automatically be created.

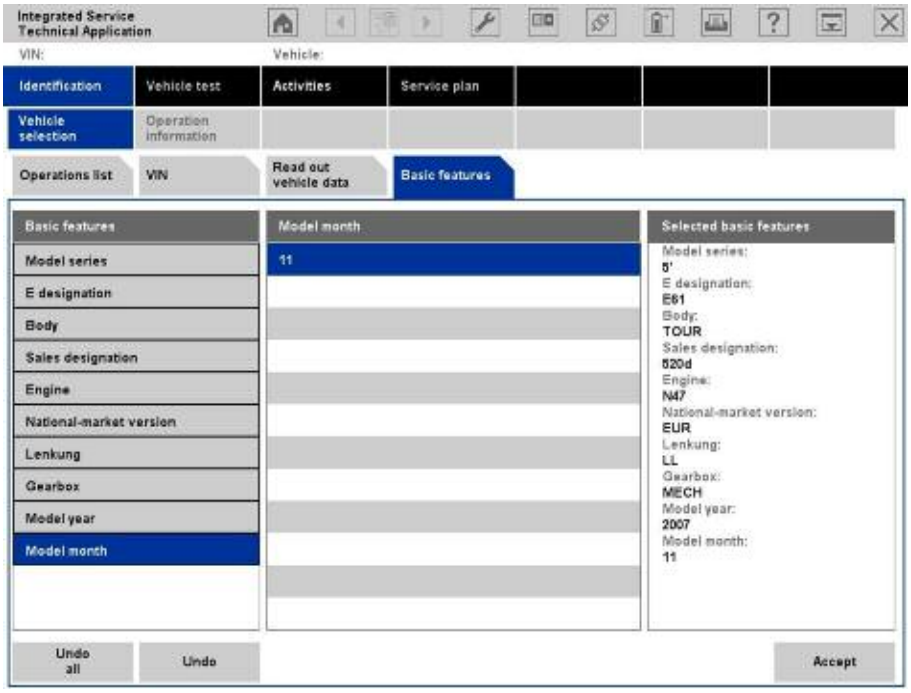
An exceptional case may occur if you have previously selected an existing operation from the operations list and then read out the vehicle data. If the VINs do not match now, the “Decision operation/VIN” pop up will appear.

Reading Out Vehicle Data via the Connection Manager

Another option for starting the automatic read out of vehicle data is via the “Connection manager” mask. You can call it up at any time via the symbol bar. (See “Connection Manager” section.)

Basic Features

If the vehicle identification number is unknown, you can alternatively use the “Basic features” tab.



“Basic features” tab

► How to identify a vehicle via its basic features:

◊ Click the “Identification” main menu. The “VIN” tab will be selected.

◊ Click on the “Basic features” tab.

◊ If required, choose another basic feature from the left-hand “Basic features” selection list.

◊ Define the contents for the basic feature by selecting an entry from the central list.

◊ If necessary, repeat the entry with other basic features (the predefined sequence does not have to be observed) or click the “Accept” button.

After the individual basic features, the workshop system only offers items that are compatible with the previously selected ones. This excludes contradictory entries.

There is no need to enter all available basic features. However, you must define at least one. The more completely you specify the basic features, the more precisely the workshop system can select the matching documents.

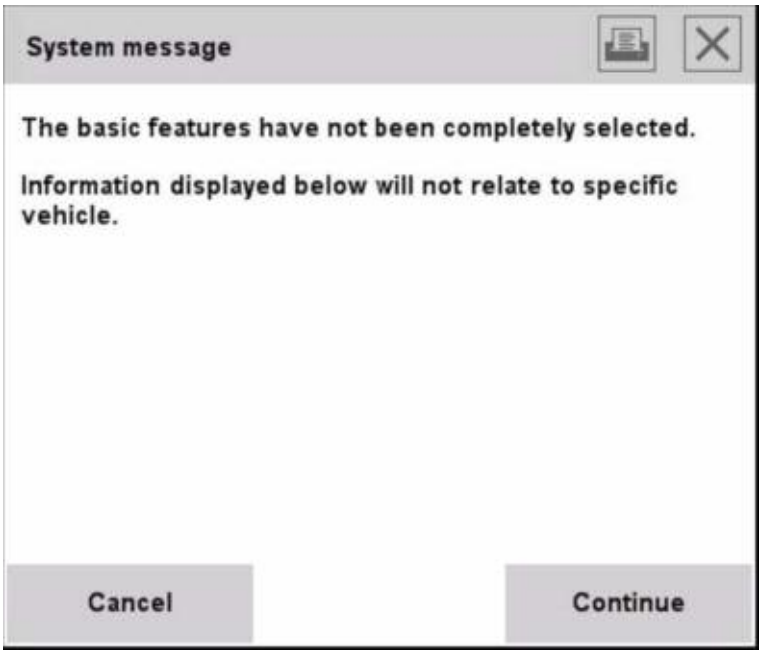
Note: Without specification of E-designation and in some cases the model year and month, vehicle-specific searches for the function structure, component structure, or service function structure cannot be performed!

Note: It is not possible to manually select the features for security vehicles. Security vehicles can only be identified via the VIN.

After entering the basic features a check is performed to see whether an operation with the specified features is already present in the operations list and a selection is offered. If the selected basic feature combination is unknown, a new operation is automatically created.

Incomplete Entry of Basic Features

If you click the “Accept” button without having defined all “Basic features”, a pop up window appears containing a system message. Acknowledge the message with “Continue” to end the vehicle selection procedure or return to selection of the basic features with “Cancel”.



“System message incomplete entry of basic features” pop up window

On completion of vehicle identification, the display switches over to the “Operation details” menu.

Operation Information

“Operation information” is automatically accessed after the vehicle identification is completed. This is where information on the current operation and the identified vehicle is displayed.

Operation Details

If you have completed vehicle selection or if you access the “Identification” menu from an ongoing operation, the workshop system automatically displays the “Operation details” tab.

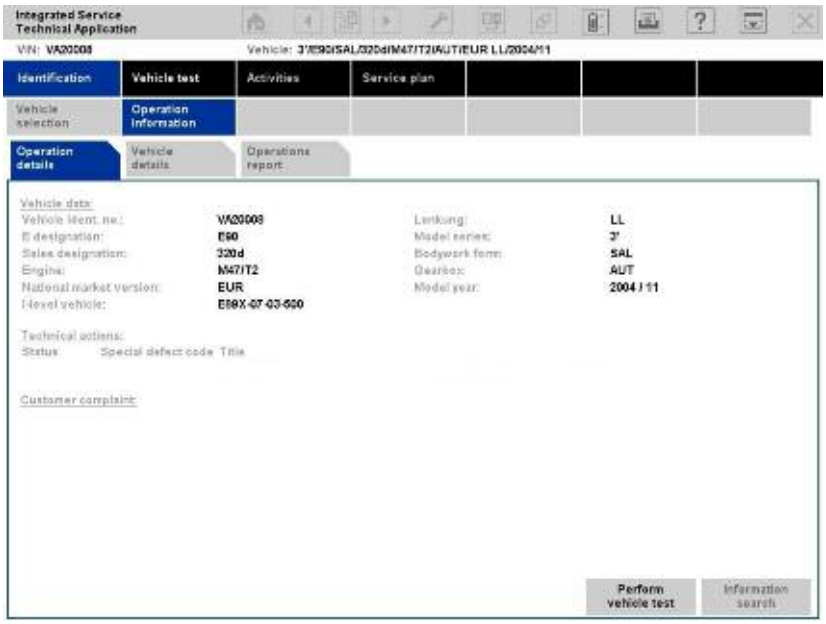
This is where you can view general information to identify the vehicle, for example:

- ◊ Basic features of vehicle
- ◊ Technical actions on the identified vehicle with status “open”, special defect code and name (title)
- ◊ Customer statement (customer complaints).

In the header, you will see the vehicle identification number (“VIN”) and the determined basic features of the vehicle. If you select a vehicle via “Basic features”, the basic features that you entered appear in the header.

Prerequisites:

- ◊ Vehicle identification.
- ◊ Before the “Technical actions” can be displayed, the vehicle identification number must be known and an online connection must be established to BMW headquarters.



“Operation information” menu, “Operation details” tab

The following buttons are available in the action line:

◊ **Perform vehicle test**: For manual vehicle identification, this button starts the vehicle test. With automatic vehicle identification, the vehicle test proceeds in the background and the button only switches over to the control unit tree.
Note: For the E21 – E31 Series, the BST mode is called up!
(for more information see BST mode).

◊ Information search

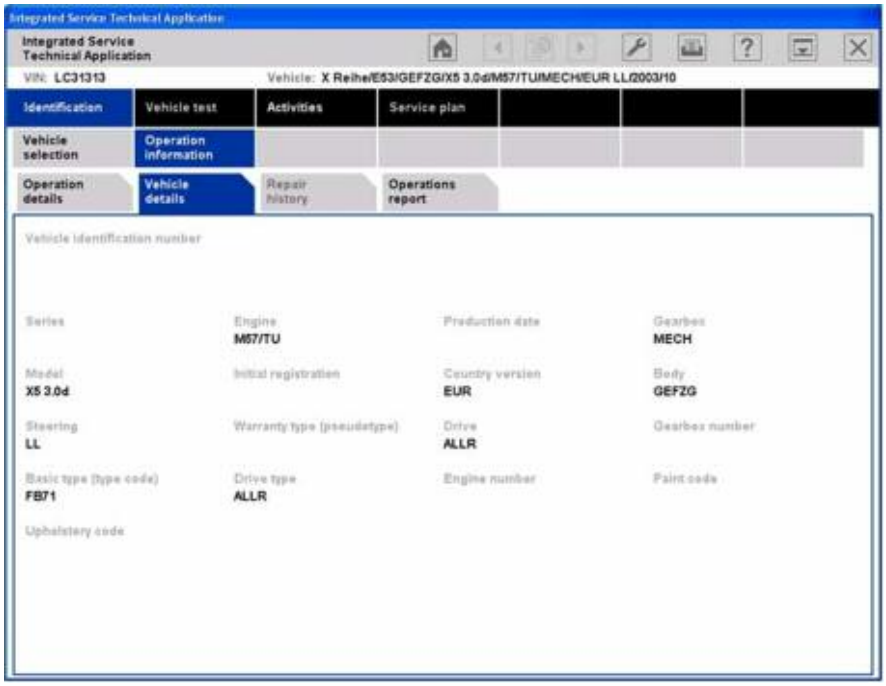
Vehicle Details

You can obtain more detailed information on the selected vehicle by clicking the “Vehicle details" tab, such as series equipment and special equipment. This information will be retrieved from a central database and indicates the vehicle status in each case on delivery from the factory. Retrofitted equipment or installations are not taken into account. Not all information is available for vehicles made before 1992. Therefore valid values cannot be displayed in all fields. Such fields are displayed without a value.

Prerequisites:

◊ Vehicle identification via “VIN”.

◊ Online connection to BMW AG (via ISPA Broker).

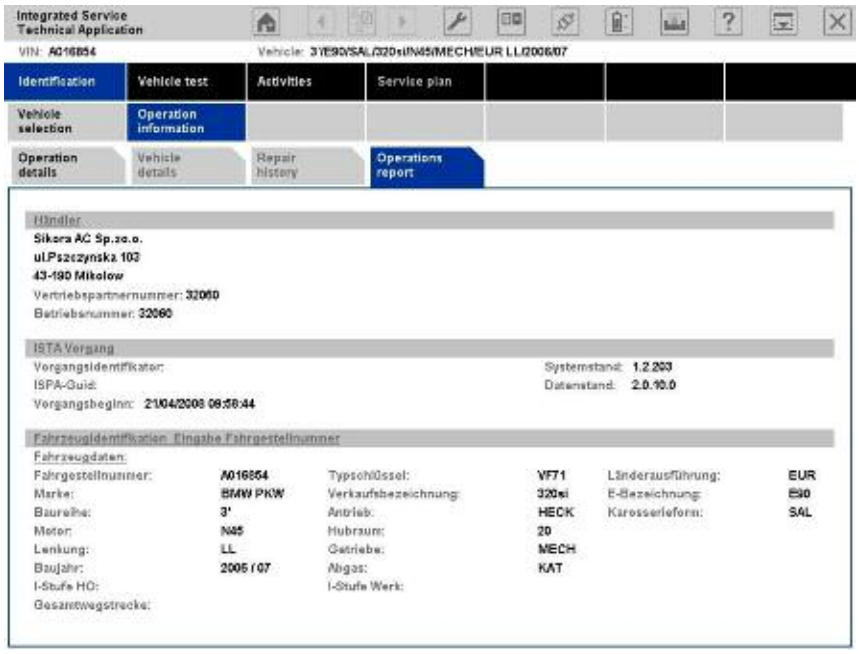


“Operation information” submenu, “Vehicle details” tab (no current screenshot)

Note: The standard series equipment and special equipment listed in the “Vehicle details” mask corresponds to the state of the vehicle as it left the factory and may diverge from the present state of the vehicle!

Operations Report

By clicking the “Operations report” tab you will receive a report on the ongoing operation with the dealer data and the data on the respective vehicle. The report is constantly updated during the execution of the operation.



“Operation information” submenu, “Operations report” tab

The screen display for the operations reports differs from the printed report because of its colored displays. The following information blocks are contained in the operations report:

- ◊ Dealer data
- ◊ Vehicle data
- ◊ Customer complaints (customer's own words, customer's quote, qualified)
- ◊ Start of operation (date, time)
- ◊ First vehicle test
- ◊ Fault memory data from the first vehicle test
- ◊ Test plan diagnosis start (first test plan)
- ◊ Test plan diagnosis end (last test plan)
- ◊ Information object selected (title, document type, identifier)
- ◊ Process object selected (title, start, end time stamp, identifier) plus process steps (inputs/outputs, ECU functions, measuring instruments actions)
- ◊ Vehicle test diagnosis end (last vehicle test)
- ◊ Fault memory data (last vehicle test)

Print operations report or diagnostic report

► How to print out an operations report:

◊ Click on the “Print” icon.

◊ Select the “Document” option.

◊ Click on the “OK” button.

FBM Reports (FASTA)

FBM reports are always automatically produced in the background when an operation is terminated or interrupted (exception: OSS) and forwarded to BMW AG. In offline mode, the FBM reports are not created until the system is synchronized with the server.

Vehicle Test

The vehicle test determines the control units installed in the vehicle and their variants, as well as their special equipment. Furthermore the vehicle test reads the diagnostic and service-related data from the control units and generates test plans, which become part of the service procedure. In the first vehicle test within an operation, vehicle-specific FASTA data are determined and logged.

Prerequisites for the vehicle test:

◊ Vehicle identification

With manual vehicle identification the primary vehicle test starts by clicking on the “Perform vehicle test” button in the “Operation details” mask. With automatic vehicle identification, the vehicle test runs in the background of the “Operation details” mask. By clicking the “Perform vehicle test” button, the workshop system switches to the “Control unit tree” mask and runs the vehicle test in the foreground.

If required, for example after repair or modification work, you can restart the vehicle test manually.

Note: For the E21 - E31 Series, there is no vehicle test available. Clicking the “Perform vehicle test” button in the “Operation details” mask takes you to BST mode. Furthermore, the “Vehicle test” and “Activities – Guided troubleshooting” menus are inactive.

Note: The “Operation information” submenu, “Repair history” tab function at present is only available in Germany!

Control Unit Tree

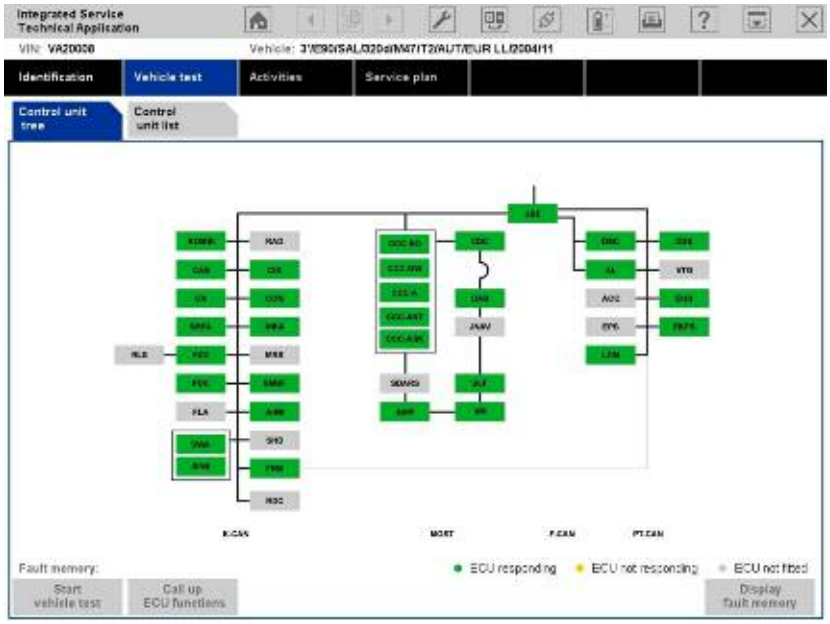
The “Control unit tree” mask shows the configuration of the control units. While the vehicle test is running, the symbol of the directly accessed control unit will be displayed in the color of the mask. The vehicle test identifies the installed control devices and reads out the fault memory and the control device characteristics.

At the end of the vehicle test, the symbols in the control unit tree indicate the test result by means of the following colors:

◊ Green: control unit is responding

◊ Yellow: control unit is not responding

◊ Gray: control unit is not installed.



Control unit tree (after vehicle test)

► How to repeat the vehicle test:

◊ Click the “Start vehicle test” button. In the “Control unit tree” mask, the control unit symbols are updated again according to the vehicle test just completed.

► Thus the vehicle test starts automatically behind the “Operation details” mask:

◊ Select “Identification” -> “Vehicle selection” -> “Read out vehicle data” in the navigation area to perform an automatic vehicle identification.

◊ Continue as described with the “Read out vehicle data” tab.

The buttons in the action line do not become active until after the vehicle test, and have the following functions:

◊ **Start vehicle test**: repeats the vehicle test.

◊ **Call up ECU functions**: switches to the “Control unit functions” mask.

◊ **Display fault memory**: switches to the “Fault memory list” mask.

Control Unit Functions

The control unit functions become accessible if at least one vehicle test has been completed for the ongoing operation.

► How to call up the control unit functions for a control device:

◊ Click on a control device in the control unit tree; or

◊ Select a control unit from the control unit list.

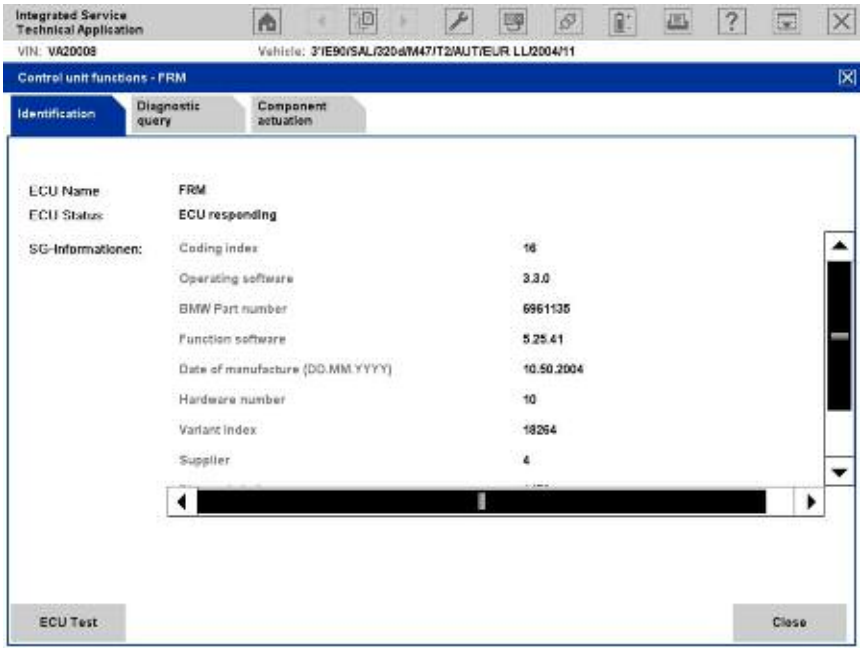
◊ Click the “Call up ECU functions” button in the action line. The following control unit functions can be displayed in three different tabs: - Identification - Diagnostic query - Component activation

◊ Return to the original mask by clicking the “Close” button.

Identification

The control unit function “Identification” is selected by clicking the “Call up ECU functions” button.

“Identification” tab



The “Identification” tab contains the following data:

- ◊ **ECU Name**: name of the control unit version.
- ◊ **ECU Status**: communication status (“ECU responding”, “ECU not responding”).
- ◊ **ECU Information**: this is where the ECU readout specifications are listed.

The buttons in the action line have the following meanings:

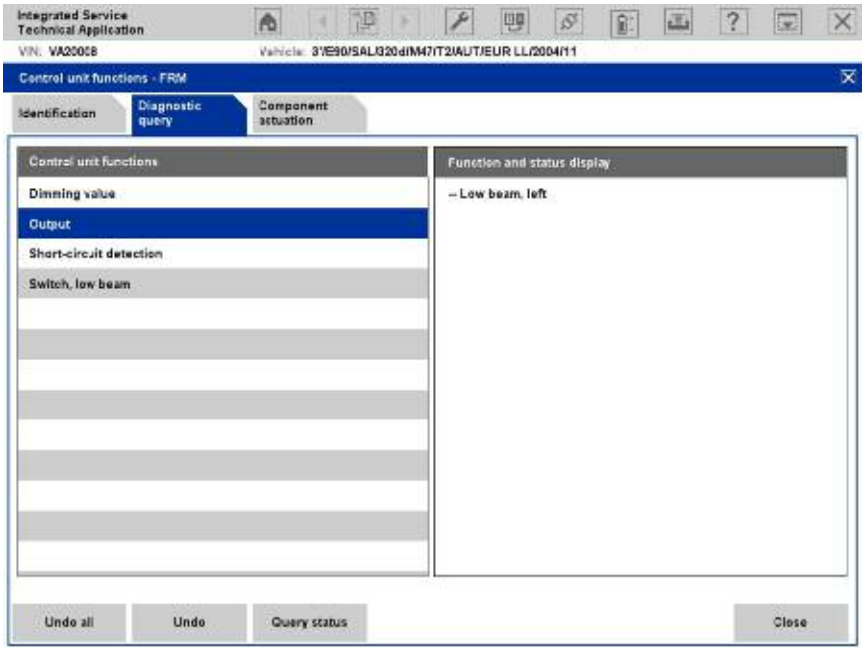
- ◊ **ECU Test**: reads the ECU data out again. A progress display keeps you up-to-date with progress.
- ◊ **Close**: closes the display of the control unit functions and returns to the original mask.

Diagnostic query

Access the diagnostic query by clicking on the “Diagnostic query” tab.

The content range is divided into two sections; The “Control unit functions” table lists the sensors belonging to the control unit and the “Function and status display” area indicates the current signal status.

Depending on the control unit, several sensor may be combined in groups whose entries you can open by clicking so that you can reach the individual sensors. Multiple selection is possible.



“Diagnostic query” mask

The buttons in the action line have the following meanings:

◊ **Undo all**: undoes the entire selection in the table.

◊ **Undo**: undoes the last selection in the table.

◊ **Query status**: switches the cyclical update of the display on or off.

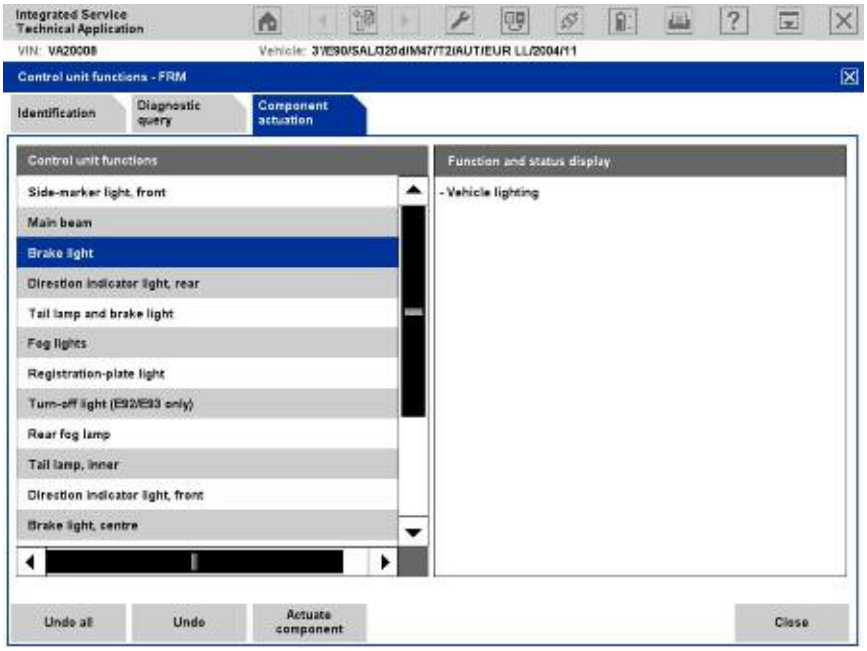
◊ **Close**: closes the display of the control unit functions and returns to the original mask.

Component activation

Access the component activation by clicking on the “Component activation” tab.

The content range is divided into two sections: The “Control unit functions” table lists the actuating elements and the “Function and status display” area indicates the current status of an actuated component.

Depending on the control unit, several actuating elements may be combined in groups whose entries can be opened by clicking so that you can reach the individual actuating elements. Multiple selection is not possible.



“Component activation” mask

The buttons in the action line have the following meanings:

◊ **Undo all**: undoes the entire selection in the table.

◊ **Undo**: undoes the last selection in the table.

◊ **Actuate component**: displays the associated function name and the execution of the function in the “Function and status display” area.

◊ **Close**: closes the control unit functions display and returns to the original mask.

Control unit list

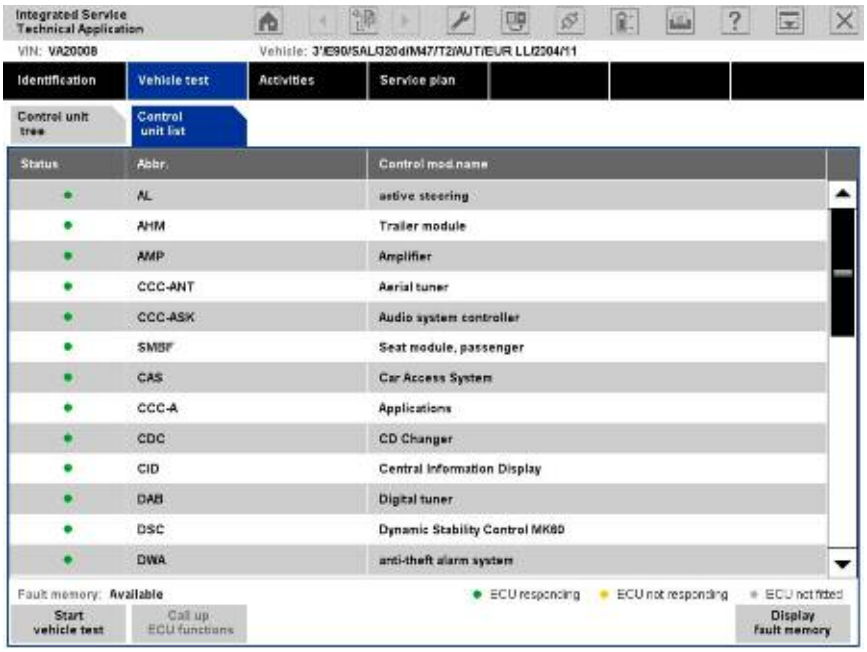
The control unit list is another way of presenting the control unit tree. You can call up the list by clicking the tab as soon as the first vehicle test is completed and repeat it from the vehicle test.

The individual columns the following meaning:

◊ Status: This is where the status of communication with the control unit of the vehicle test is updated.

◊ Abbr.: The abbreviation for the respective control unit.

◊ Control unit name: A short description of the control unit appears at the beginning. When the vehicle test is performed, the control unit name is replaced by a complete description.



“Control unit list” mask

The buttons in the action line have the following functions after completion of he vehicle test:

◊ Start vehicle test: repeats the vehicle test.

◊ Call up ECU functions: only active if a control unit is previously selected. Changes over to the “Control unit functions” mask.

◊ Display fault memory: changes over to the “Fault memory” mask.

Activities

Information Search

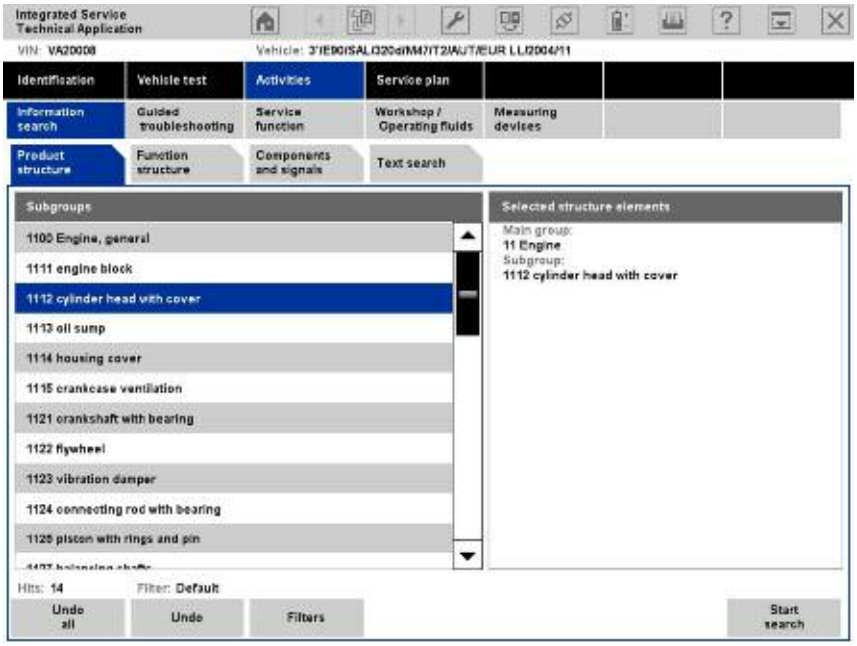
Three different structure searches (Product structure, Function structure, Components and signals) and a text search are available in the “Information search” menu.

Prerequisites:

◊ Vehicle identification.

Product Structure

In the product structure menu, you can search for information in the main and subgroups. In the left-hand column, the required product group can be selected. The previously selected elements are clearly displayed in the “Selected structure elements” column.



“Product structure” tab

The elements in the info line have the following functions:

◊ Hits: states how many elements satisfy the present search criteria. If a product group has not been selected, then the number of hits is “0”.

◊ Filter: displays the filter status. If you have not changed the filter setting, then the “Default” status appears; otherwise it is “User-defined”.

The buttons in the action bar have the following functions:

- ◊ **Undo all and Undo**: You may reverse individual or all operating steps so that you can enter new search criteria.
- ◊ **Filter**: You can call up a window with which you limit the search to certain time periods or information types, e.g. circuit plans or repair instructions . These filter settings are taken into account in the search.
- ◊ **Start search**: Start search using the selected criteria.

► How to search in the product structure:

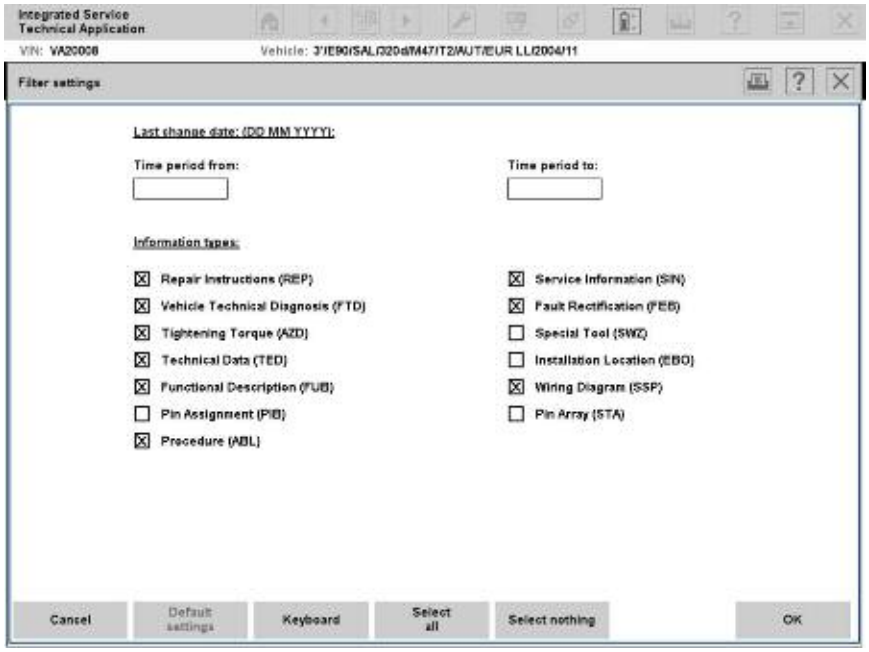
- ◊ Select one element in the left-hand selection list. Depending on the item chosen, in some cases further selection lists with additional options will be displayed, via which you can further refine your search criteria.
- ◊ Further restrict the search criteria in the left-hand list. The previously selected items are clearly shown in the “Selected structure elements” column.
- ◊ If necessary, you can refine the selection using the “Filters” button.
- ◊ Click the “Start search” button.

When the search has been completed, the ISTA workshop system switches over to the “Service plan” and displays the hit list.

Filters

The “Filter settings” window can be accessed via “Information search”, “Service function”(See “Test plan”) by clicking the “Filters” button in the respective window. You can change the filter settings for information types and/or define a time slot for the latest update of the documents.

In the default setting, the information types available in the respective search mode are preselected. These preselected as well as the manually selected information types are marked with a cross.



“Filter settings” tab

The buttons in the action bar have the following functions:

- ◊ Cancel: the window is closed and the changed filter settings are not adopted. The filter status does not change and remains in the previous status (“Default” or “User defined”).
- ◊ Default settings: resets the filter to the preset values.
- ◊ Keyboard: displays the on-screen keyboard.
- ◊ Select all: marks all information types.
- ◊ Selecting nothing: removes all selections from the information types.
- ◊ OK: starts the search.

► How to change the filter settings for information types:

- ◊ Click on a specific information type that you would like to select or deselect or else click on the buttons “Select all” or “Select nothing”.
- ◊ Select or deselect individual information types as required.
- ◊ Click the “OK” button. The workshop system adopts the selected filter settings and closes the pop up window. The number of hits is adapted accordingly, the filter status in the information line changes from “Default” to “User defined”.

► How to define the period for the last update of the information type:

◊ Define a date as the lower limit in the “Time period from:” field. If appropriate, use the on-screen keyboard. The date must comply with the order stated in brackets under “Last date change”.

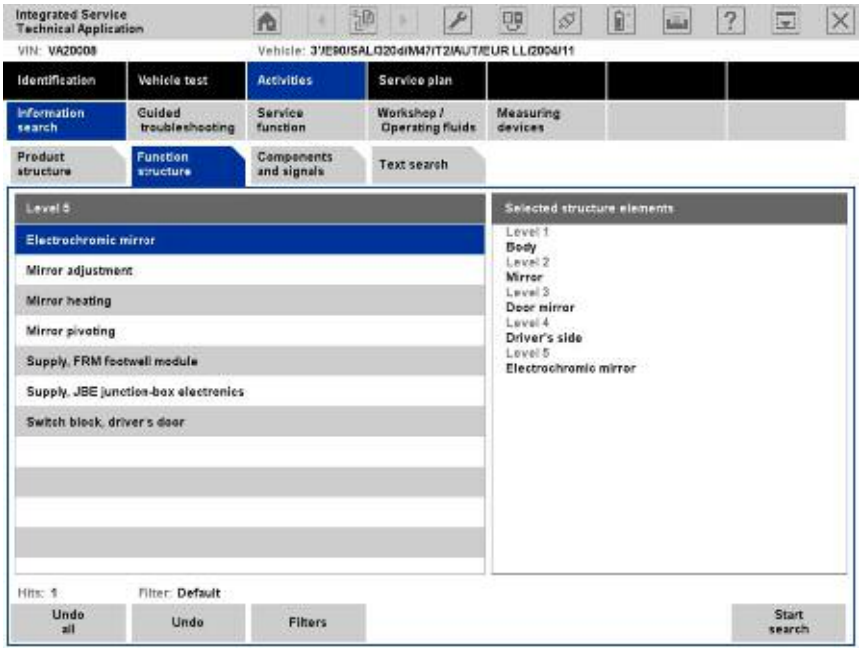
◊ Define a date as the upper limit in the “Time period to:” field. The date entered has to be later than the one entered in the “Time period from:” field.

◊ Click the “OK” button. The workshop system adopts the selected filter settings and closes the pop up window. The number of hits is adapted accordingly, the filter status in the information line changes from “Default” to “User defined”.

If you click the “Select nothing” button, then the entered period will be deleted.

Function Structure

In the “Function structure” window, you can search on several levels by selecting the function groups and functions.

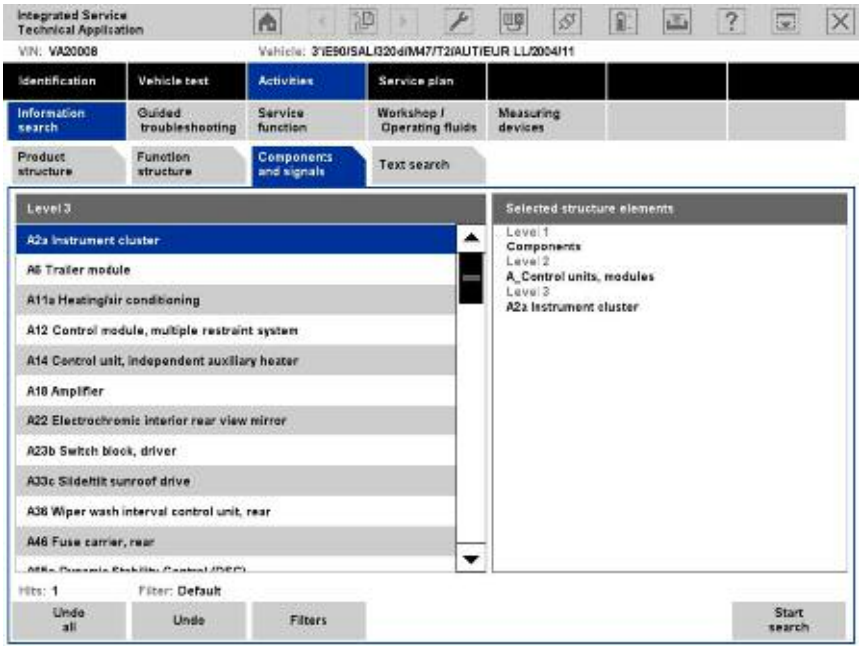


“Function structure” tab

This operation is similar to that for “Product structure”.

Components and Signals

The “Components and signals” tab can be used to search for documents that relate to a specific component or signal.



“Components and signals” tab

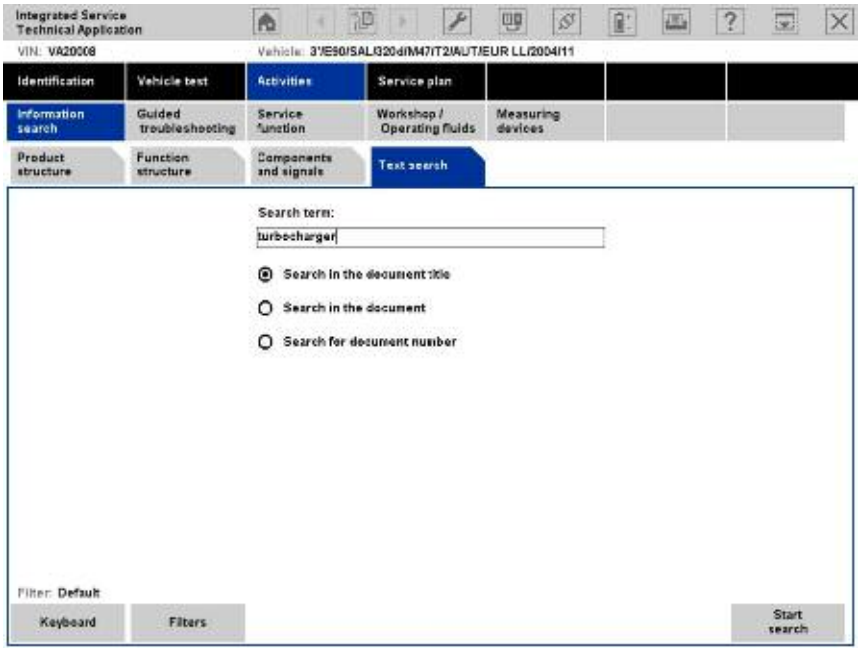
This operation is similar to that for “Product structure”.

Text Search

As an alternative to a structure search, you can also use a text search.

Prerequisites:

◊ Vehicle identification



“Text search” tab

► How to search for information with full text:

◊ Select “Activities” in the main menu.

◊ Select “Information search” in the submenu.

◊ Select the “Text search” tab.

◊ Restrict the search to document titles, documents (texts), or document numbers.

◊ Enter the text string in the “Search term” field. If appropriate, use the on-screen keyboard. If necessary, you can refine the search using the “Filters” button.

◊ Start the search with the “Start search” button.

Note: When the search has been completed, the ISTA workshop system switches over to the “Service plan” function and displays the hit list.

Additional general information on the text search

The text search is not case-sensitive. Entering “Engine” or “engine”, for example, produces the same result in the hit list.

If several terms are entered and are separated by space characters, then the terms are linked by the operator AND in the search. Only those hits that contain all of the search terms entered are displayed.

Each search term must contain at least two characters.

Additional information on the text search in headings

If you search for the term “Engine” in the title, for example, then all documents whose title includes the term “Engine” will be listed. Furthermore, all documents which have the term anywhere in their title will be added to the hit list, for example “Gasoline engine”, “Engine mounting”, “Electric engine”.

Additional information on the text search in the document

If you search in the document for the term “Engine”, for example, only documents that contain this term will be found. Documents containing terms such as “engine mounting” or “gasoline engine” will not be included in the hit list. Numbers will not be taken into account when performing a text search in the document.

Specific information for individual markets is contained in the data packages in the form of pdf files. These can be displayed in ISTA. It is not possible to perform a text search in these pdf files. Title and document number searches are also supported in these documents.

Additional information on the text search by document number

For searches by document number, the entered character sequence is only searched at the beginning of the document number. If the search term “123” is entered, then documents such as “123456” will appear in the hit list. Documents such as “456123” or “51234” will not appear in the hit list.

Additional information on text searches by component code and signal name

In the wiring diagrams codes are used for components and signals such as “A149a” for a control device or “X1108” for a ground connection. The text search can only be used to find these codes in the title. All the documents are displayed in the hit list that contain the entered code in their title, e.g. “A149a” or “X1108”. Searches by component code within the document are not possible. The same applies for searches for engine codes such as “M54”.

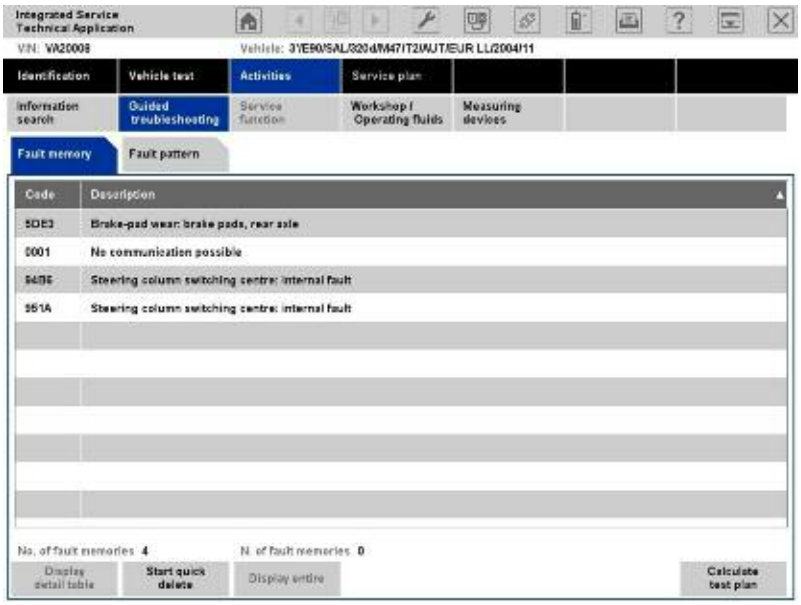
Assisted Troubleshooting

Fault Memory

The “Fault memory” tab displays the fault memory entries read out from the control units in the vehicle test.

There are several ways to reach this tab:

- ◊ On completion of the vehicle test in the “Control unit tree” or “Control unit list” tabs by clicking the “Display fault memory” button.
- ◊ By selecting “Activities” -> “Guided troubleshooting” -> “Fault memory” in the navigation area.



“Fault memory” tab

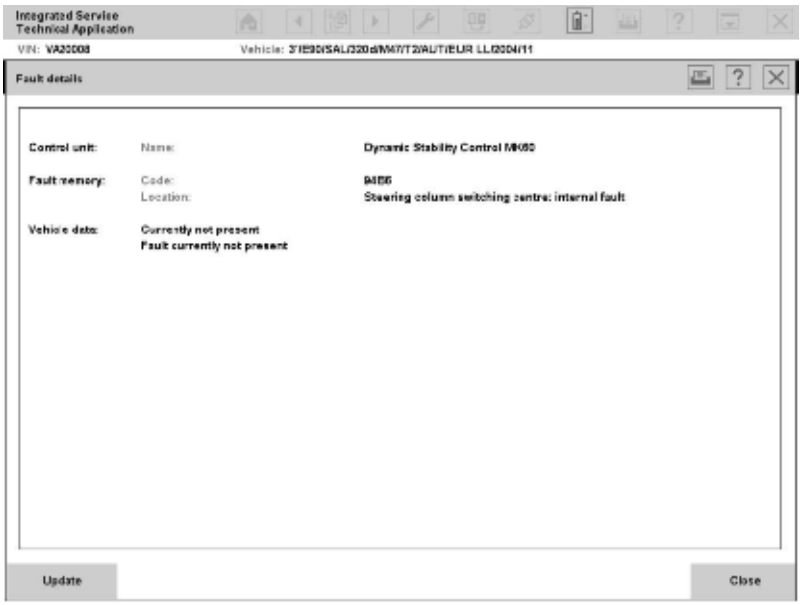
The fault memory list contains the following columns:

- ◊ **Code:** The fault code or the fault number appears in hexadecimal form.
- ◊ **Description:** This column contains a description of the fault location.

The following buttons are available in the action line:

- ◊ **Display detail table:** choose a line and then click this button. You will then obtain the detailed information on a fault. If there are several results for the ambient conditions, then only the first and the last information block will be displayed.
- ◊ **Start quick delete:** this function is only active after a completed vehicle test. In each identified control unit, the fault memory is deleted and then reread. OBD control units are only deleted if a fault is set in your fault memory.
- ◊ **Display all:** adapts the widths of all columns to their maximum text lengths. If you click the button once more, the workshop system sets the columns to their initial widths. If required, a horizontal progress bar is displayed.
- ◊ **Calculate test plan:** starts the calculation and display of the test plan with the existing fault memory entries and selected diagnostic symptoms.

Display detail table



“Fault details” mask

The “Fault details” mask contains supplementary descriptions on a fault code:

- ◊ Control unit: the name of the control unit version will be displayed.
- ◊ Fault memory: displays the fault code in hexadecimal form and, below this, fault location.
- ◊ Vehicle data: the fault status as well as details on the ambient conditions will be displayed (if available).

The buttons in the action line have the following functions:

- ◊ Update: the detailed information will be reread and displayed.
- ◊ Close: closes the window and returns to the “Fault memory” mask.

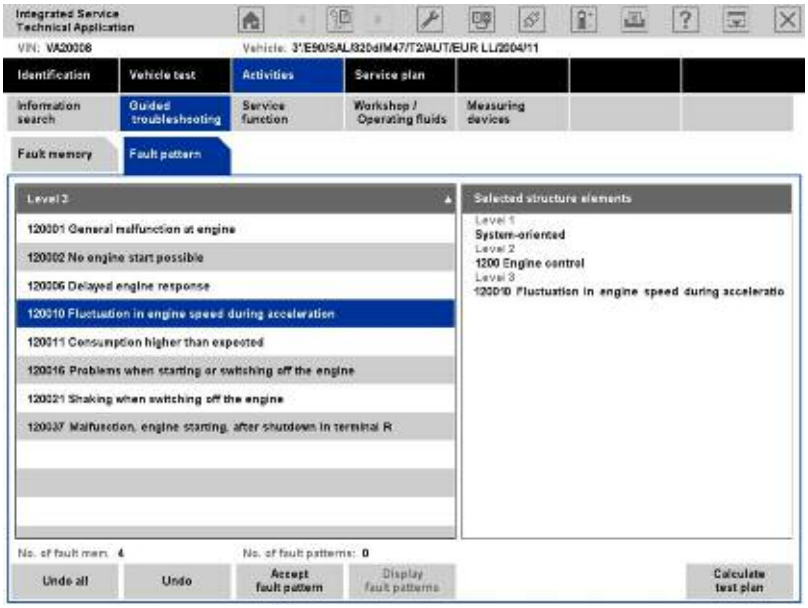
Fault Pattern

The “Fault pattern” tab can be used to select fault patterns from a functional structure on many levels. They supplement the read-in fault memory entries and are taken into account in test plan calculation. The tab is not active unless the fault memories of the identified vehicle are being read out. You should select the fault patterns independently of the customer's complaints about the vehicle. Otherwise, only the saved faults will be taken into account when the test plan is created. Especially for complaints apart from the vehicle's electric system, the selection of fault patterns is especially important for assuring a successful diagnosis.

Select “Activities” -> “Guided troubleshooting” -> “Fault pattern” in the navigation area.

In the left-hand section of the content range, you can select the fault pattern from a hierarchical structure then start with the uppermost, most general level and work your way down to an exact description of the fault pattern. On the right side of the mask, the path through the selection levels is logged.

Define the fault pattern as precisely as possible; otherwise, the test plan generates an unnecessarily high number of test suggestions.



“Fault pattern” tab

The following buttons are available in the action line:

◊ Undo all: deletes the existing selection and returns to the uppermost level.

◊ Undo: undoes the last selected step.

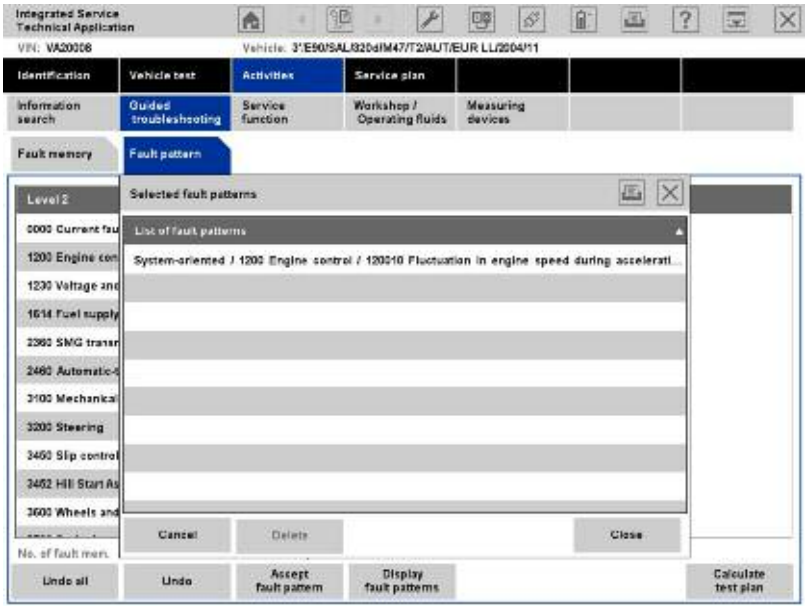
◊ Accept fault pattern: the previously selected symptom path (at least one level) is saved as a basis for subsequently calculating the test plan. The tab then returns as the “Undo all” button to the uppermost selection level. The selected fault pattern is then saved when you quit the “Fault pattern” tab.

◊ Display fault patterns: when clicking this button, a pop up appears containing all the previously saved fault patterns.

◊ Calculate test plan: starts the calculation and display of the test plan with the existing diagnostic symptoms.

Selected fault patterns

The pop up window in the “Fault pattern” mask shows the previously saved fault patterns.



“Fault pattern” tab with “Selected fault patterns” pop up

The following buttons are available in the action line:

◊ Cancel: the pop up window will be closed; the changes made will not be saved.

◊ Delete: deletes the selected entry.

◊ OK: the pop up window will close; the changes made will be saved.

► How to save a fault pattern and include it in the test plan :

◊ Compile the desired fault pattern in the content range by navigating through the available levels and selecting the suitable terms or phrases.

◊ If appropriate, click the “Display fault patterns” button and confirm with “OK”.

◊ Click the “Calculate test plan” button.

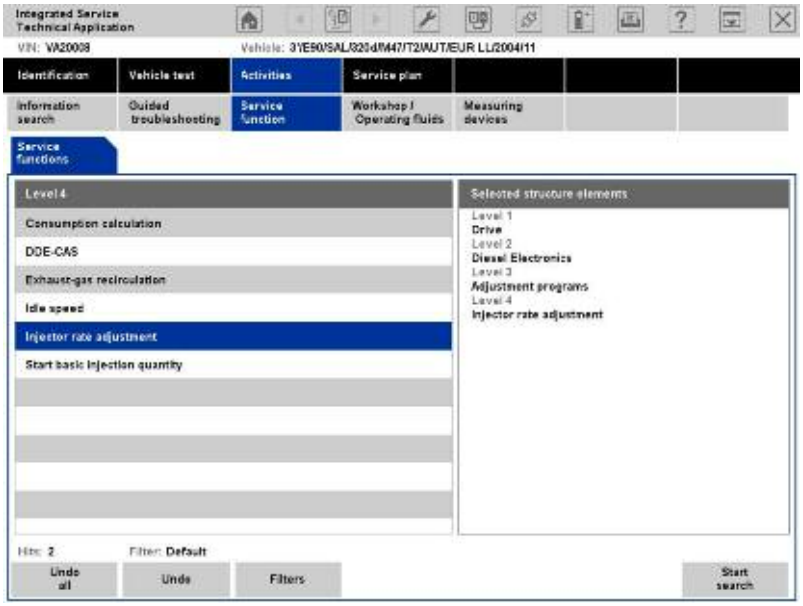
Service Function

The “Service functions” area covers all service-related jobs.

You can search for service-relevant jobs under the “Service functions” tab, e.g. when searching a function description.

Prerequisites:

◊ Vehicle identification



“Service functions” tab

This operation is similar to that for “Product structure”.

Workshop/operating fluids

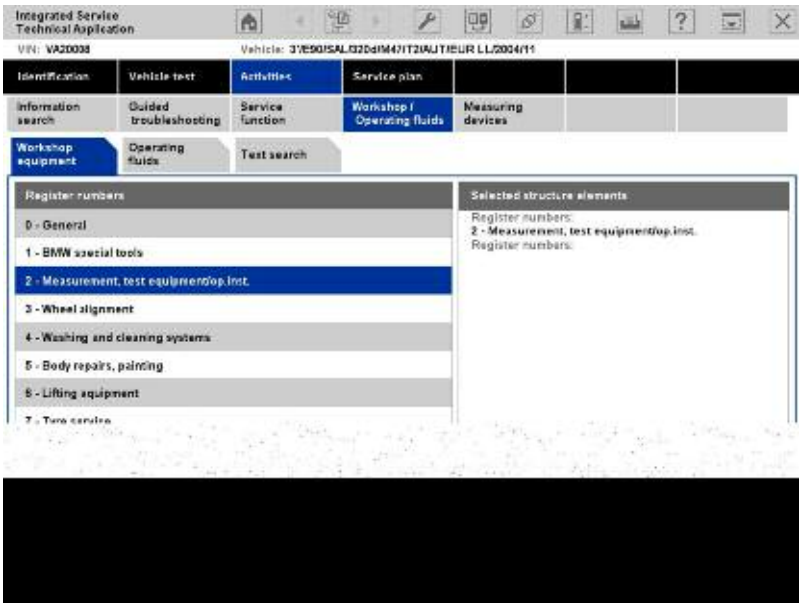
The search functions in the “Workshop/Operating fluids” area are vehicle-independent (or operation-independent, respectively); you can use these functions without previously having to identify a vehicle.

Workshop Equipment

The “Workshop equipment” tab can be used to search for general information on workshop equipment.

Prerequisites:

◊ None



“Workshop equipment” tab

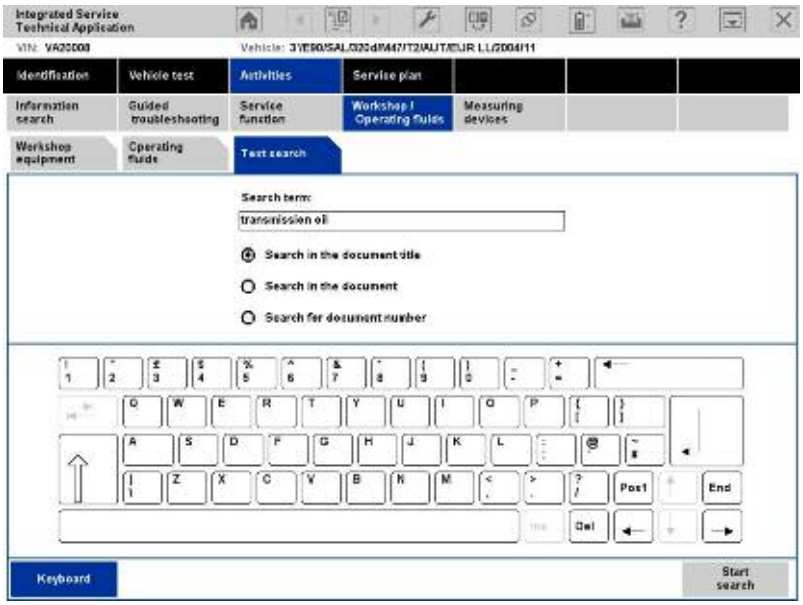
This operation is similar to that for “Product structure”. However, no filter functions are available in this case.

Text Search

You can enter character strings for vehicle-independent information via document title, document contents or document numbers.

Prerequisites:

◊ None



Example of “Text search” tab and “Workshop/Operating fluids”

► How to search for a random term:

◊ From the displayed options, choose whether you want to search for a document title, document contents, or a document number.

◊ Enter the text or number sequence that you want to look up in the “Search term” field. If appropriate, use the on-screen keyboard. Only part of a longer term has to be entered as search text, e.g. “Doc” for “Document”.

◊ Click the “Start search” button.

When the search has been completed, the ISTA workshop system switches over to the “Service plan” and displays the hit list.

Note: You can find additional information on the title or document-specific text search in section of this training material.

Measuring Devices

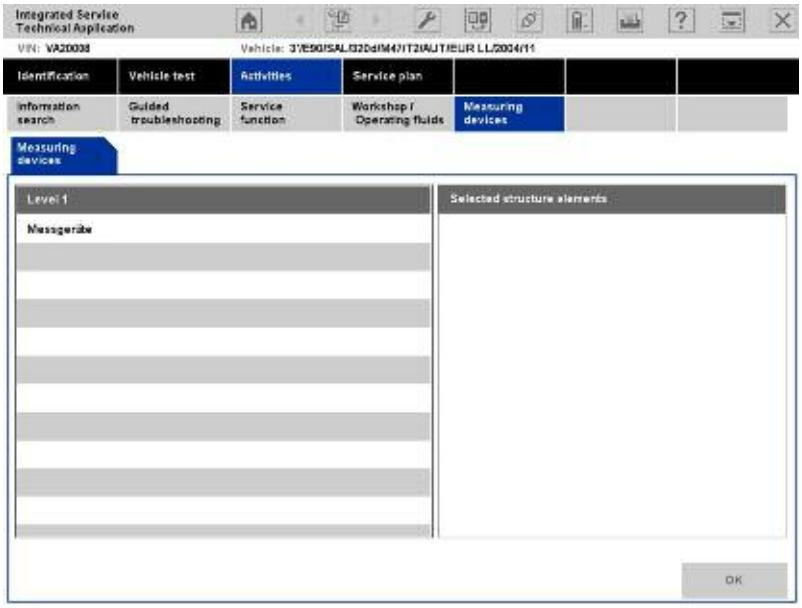
The measuring devices (Multimeter, Oscilloscope, Signals) are component parts of the ISTA workshop system. The corresponding measuring devices hardware, as well as the periodic measurement data logging, preparation of information, and provision of the results, is performed by the IMIB connected via LAN.

► How to start the measuring devices:

◊ Call up the measuring devices via the “Activities” –> “Measuring devices” selection in the navigation area.

◊ Choose the “Measuring devices” tab. The “Connection manager” mask appears.

◊ Select the desired IMIB and click the “Set up connection” button. The “Measuring devices” tab will then appear with the preset “Multimeter” preset tab.



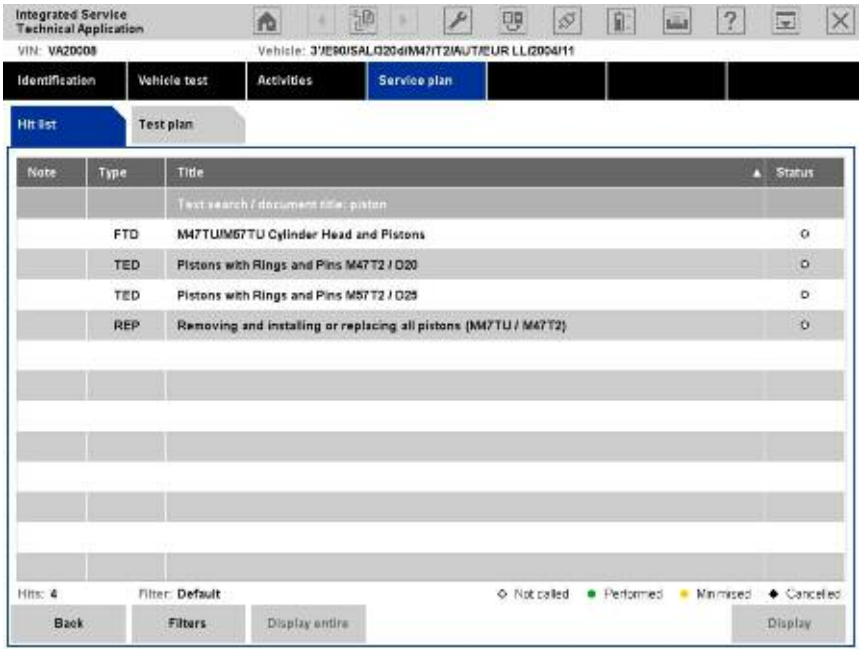
“Measuring devices” tab

Note: For more information regarding measuring systems refer to the IMIB section of this training material.

Service Plan

Hit List

The hit list shows the results of the search performed in the following menus: “Information search” (Chapter 3.4.1), “Service function” (Chapter 3.4.3.1), and “Workshop/Operating fluids” (Chapter 3.4.4). The search criterion entered is stated in the first line. All matching documents are listed under this. You can select and display a document from the hit list.



“Hit list” tab

The individual columns have the following meaning:

- ◊ Note: provides information about the entry found.
- ◊ Type: states the information type, e.g. “REP” for “Repair instruction”. All information types are listed in the “Table of types Information filtered” (in the next page).
- ◊ Title: the first title states the search criterion used to call up the hit list. The remaining lines contain the titles of the documents found.
- ◊ Status: shows whether the named document has already been accessed during the operation: - white circle: not accessed - green circle: performed or called up - yellow circle: minimized - black circle: display canceled.

The buttons in the action list have the following functions:

- ◊ Back: returns to the previous mask.
- ◊ Filter: calls up a menu for setting a filter. The filter determines which objects are displayed and which are suppressed.
- ◊ Display entire: adapts the widths of all columns to their maximum text lengths. If you click the button a second time, the workshop system returns the columns to their initial widths. If required, a horizontal progress bar is displayed.
- ◊ Display: shows the selected document.

The following table shows the possible information types in the hit list with their abbreviations:

Abbreviation	Information type
PRC	Procedure (service program)
AZD	Tightening torque
EBO	Installation location
FEB	Fault elimination
FTD	Vehicle engineering diagnosis
FUB	Functional description
PIB	Pin assignments
REP	Repair instructions
SBS*	Operating fluids
SIT*	Service Information (Engineering)
SSP	Wiring diagram
STA	Connector view
SWS	(SI) Special tools/equipment
SI	Special tools
TED	Technical data
*** Only via Workshop/Operating fluids**	

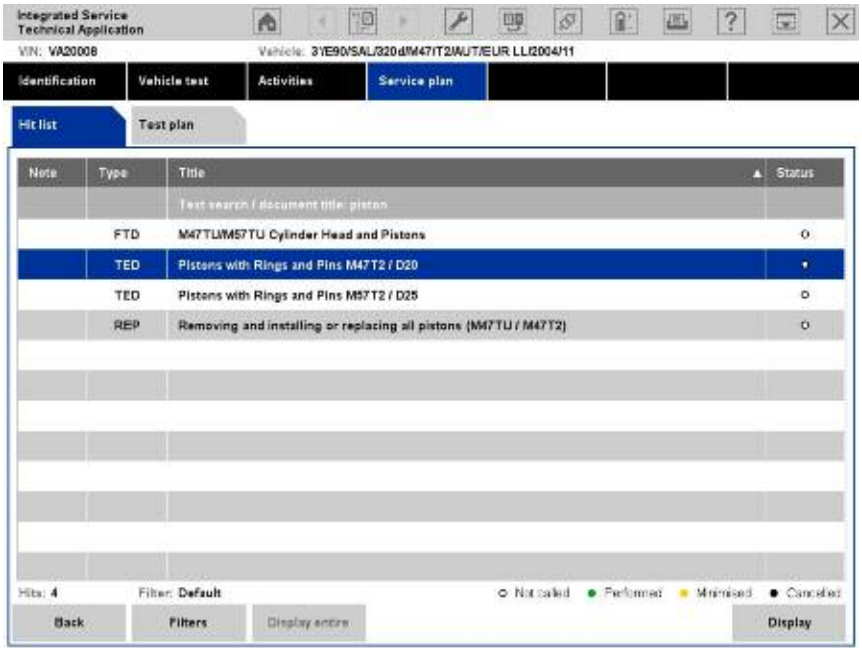
Table of types of Information filtered

Viewing a Document

► How to view a document:

◊ Select a line. The corresponding entry is highlighted in color. The “Display” button is active.

◊ Click on the “Display” button. The required document will be displayed.

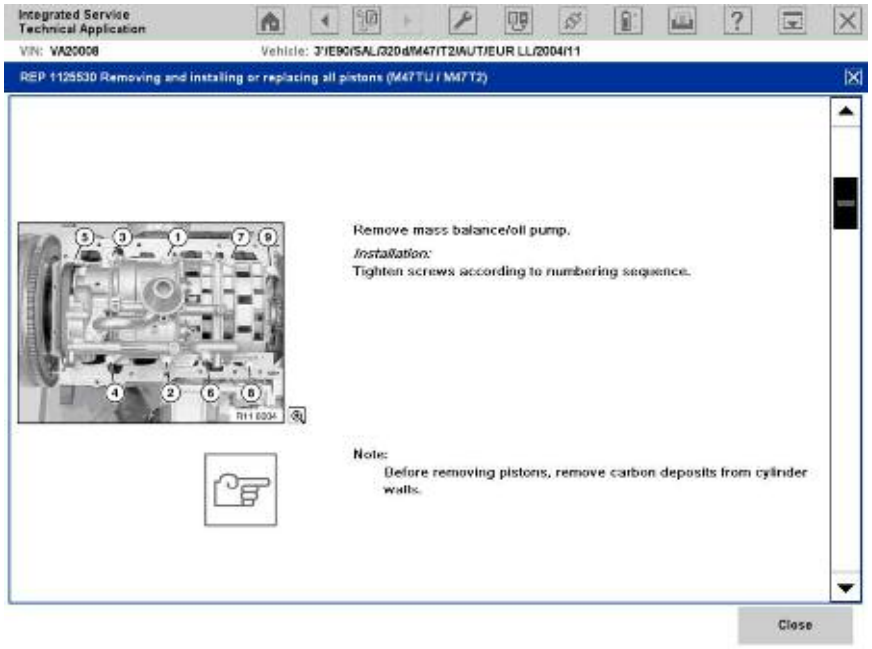


Selecting a document for display

Text Documents

Besides texts, text documents also contain graphics, photos and cross-references (hyperlinks). Cross-references appear in blue, underlined lettering; when you click a link, another cross-referenced document is opened.

A magnifying glass symbol is shown in text documents next to graphics. You can use it to zoom in on the corresponding illustration.

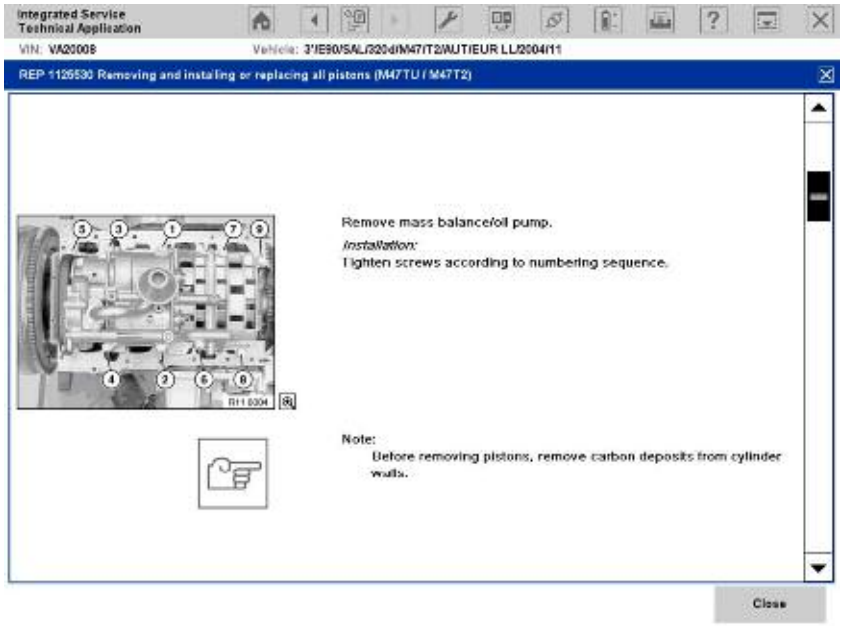


Text document

◊ Close: closes the window and returns to the hit list.

Wiring Diagrams

Sometimes the displayed wiring diagram may contain hyperlinks. These are recognizable as such by their blue lettering. Via hotspots, you can access detailed information such as installation position, connector view or pin assignment for one of the components. The additional information is displayed together with the scaled-down wiring diagram.



Wiring diagram with hotspots and BirdView function

The action list offers several options for changing the presentations:

- ◊ Installation: call up a list of wiring diagrams that contain the selected component. To do this selected a component drawing and then click the “Installation” button. A list of wiring diagrams is displayed in a pop up. Here you select and display the desired wiring diagram.
- ◊ Move: activated during selection. In this mode, you can move the document around the mask. To do this, click the document and drag it in the desired direction. If you click the “Move” button a second time, this function is switched off again.
- ◊ Zoom in: activated during selection. In this mode, you can magnify the document step-by-step. To do this, click the document; the clicked point will be centered. The “BirdView function” is active from the first magnification level. It facilitates navigation within a wiring diagram. At the top right of the content range, a window appears in which the small scale wiring diagram is displayed. You can then move the square, framed in red, in the x and y-directions; the excerpt of the wiring diagram in the content range moves accordingly.
- ◊ Zoom out: zooms out step-by-step from a magnified view until the original size is displayed.
- ◊ Whole screen: is active when several documents are simultaneously displayed on the screen. It magnifies the view of the active document to fill the entire screen width.

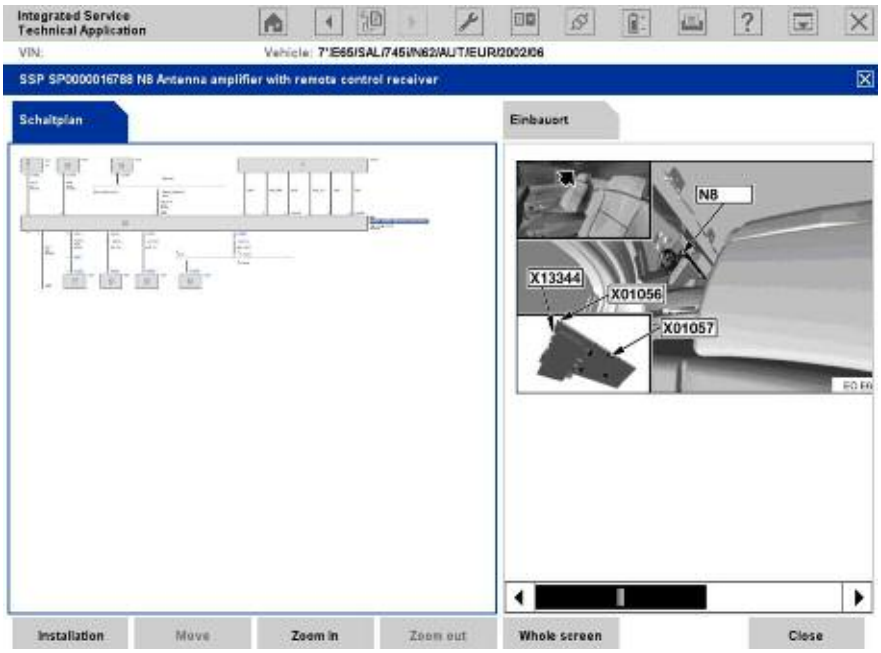
If you have accessed detailed documents via a hotspot, clicking on this button will close the detailed document and magnify the view of the wiring diagram to the full screen size.

◊ Close: by clicking this button, you return to the hit list.

Display several documents simultaneously

Several documents can be displayed in the content range. This option is only available for wiring diagrams and the information that can accessed from them via hotspots. The following example shows the split display, in which you can switch to the right-hand window between additional documents via the displayed tabs.

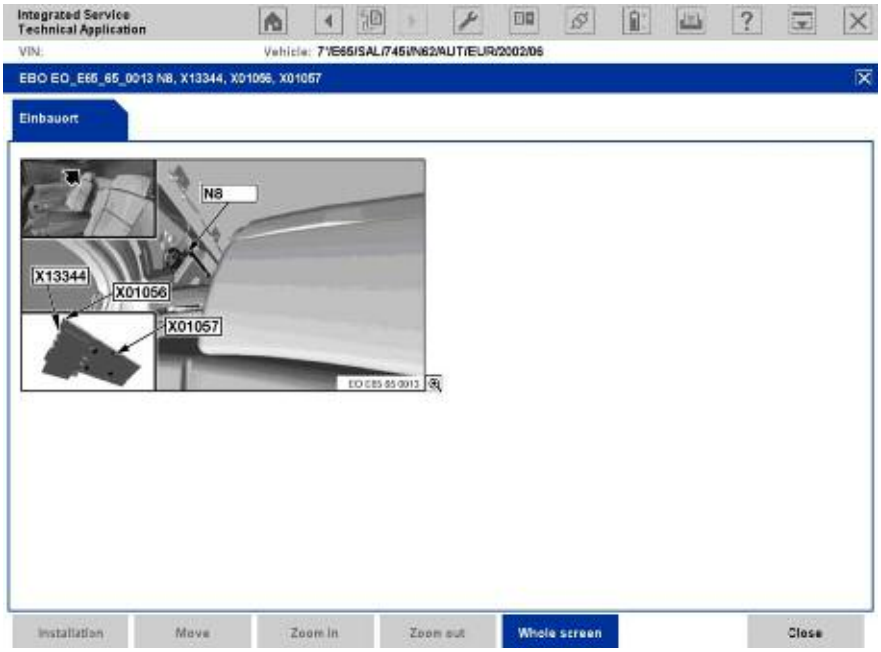
Remember that the functions that can be accessed by using these buttons only apply to the active window. You can see which window is active by the color-coded tab.



Displaying several documents simultaneously, for example

Whole Screen

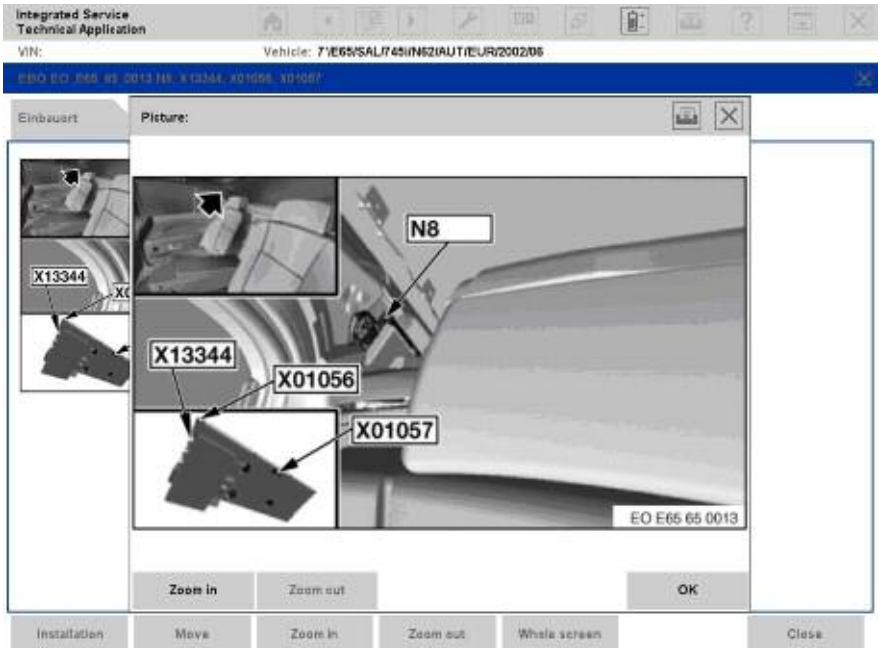
Via the “Whole screen” button, you can select the active document (tab is highlighted in color) and display over the entire width of the screen. A second click on the ”Whole screen" button deactivates the whole screen display mode and returns to the split display.



Whole screen example

Zoom Function

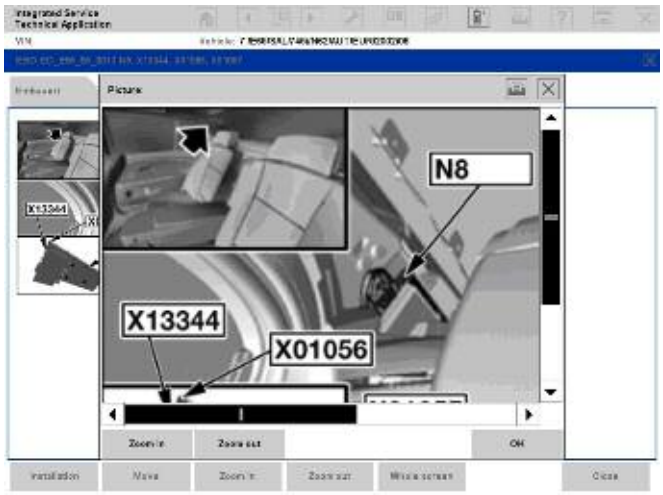
You can call up the zoom function by clicking the magnifying glass symbol at the bottom right under the pictures. The magnified image will be displayed in a pop up window.



Zoom function example

The window offers the following functions:

- ◊ Zoom in: Magnifies the view in several steps. After the first click, scroll bars will appear at the bottom and right side of the display window, helping you to adjust the size of the required screen section.
- ◊ Zoom out: Zooms out the picture in several steps back to the original size.
- ◊ OK: Closes the window.



Zoom in example

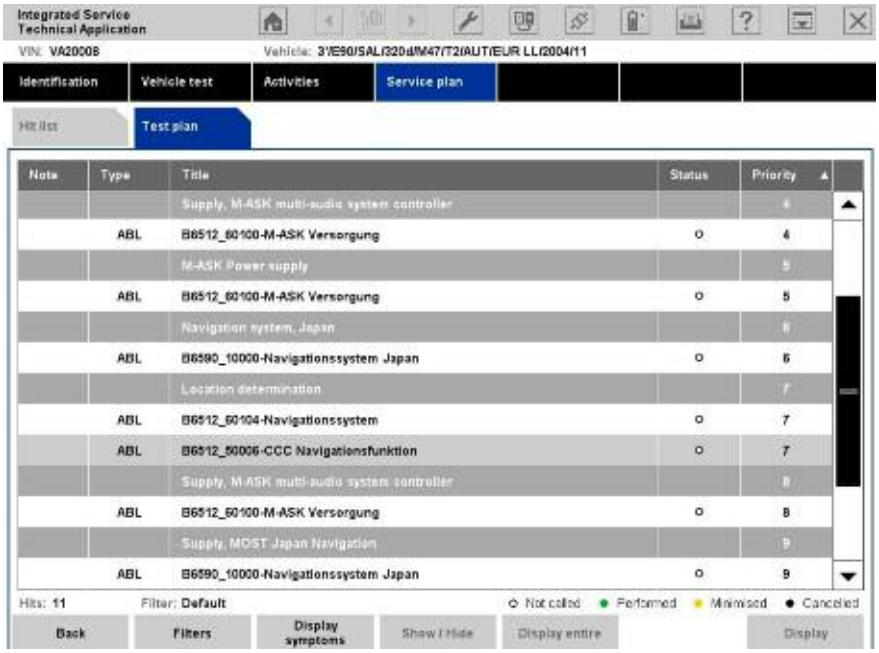
Test Plan

When first opened, the “Test plan” tab contains the test plan that has been calculated on the basis of the most recently read fault memory entries and/or selected fault patterns. Components/functions to be examined are presented in the multicolumn table in white lettering; the associated documents and procedures appear below the component/function to be examined in black lettering.

The information line on the left states the number of hits. The filter status states whether the default setting of the filter has been changed. Next to it, the symbols for process status are explained.

Clicking the “Calculate test plan" button in the “Fault memory list” mask or in the “Fault patterns” mask will automatically take you to the “Test plan” tab. Provided that at least one fault memory entry and/or fault pattern is present, you can also get to the mask manually via “Service plan” -> “Test plan” in the navigation area.

In the standard view, the mask only lists the test suggestions for components/functions to be examined, sorted according to priority. A selected line is highlighted with the mask color.



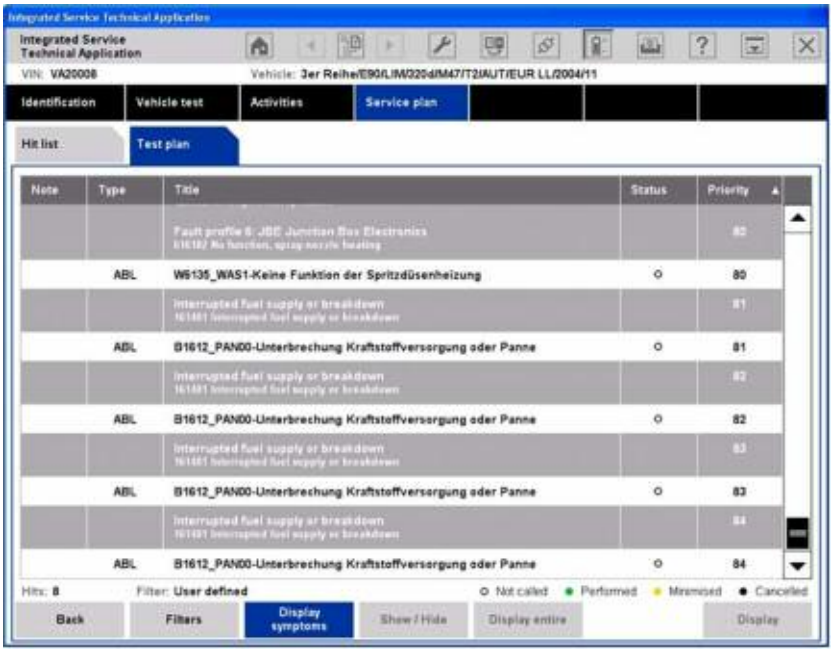
“Test plan” tab in the standard view

In the content range, the following information is displayed in the sortable columns:

- ◊ Note: A little red square signifies that a note about this test suggestion is available from BMW AG.
- ◊ Type: Information type. For example, “ABL” stands for “Ablauf” (procedure) and indicates a test program. After selection and clicking the “Display” button, the test program starts by attempting to localize a fault in the operation of the suspected component/function.
- ◊ Title: Description of the component/function to be checked, possibly with symptoms; title of the document or test program.
- ◊ Status: The process status is indicated with a circle symbol. An empty or colored circle indicates the following statuses:
- ◊ Empty: The procedure has not been started or performed yet, or the document has not yet been called up.
- ◊ Green: Procedure performed or document called up.
- ◊ Yellow: Minimized. This mode indicates that a procedure is running in the background. It can be displayed again via the “Display” button. Only one procedure can be active at a time. It is possible to switch to the “Control unit functions” mask and to start the functions there if the test module currently running is not using the vehicle interface.
- ◊ Black: Procedure canceled.
- ◊ Priority: Priority is graded from 1 in descending order; 1 represents the highest priority. The calculated priority figures determine the order of the object in the test plan. A two figure code, is displayed for suspect causes that are generated by a test procedure.

The buttons in the action line have the following functions:

- ◊ Back: Go back to the previous mask.
- ◊ Filters: Calls up a menu for setting a filter. The filter determines the information objects that will appear in the test plan and those that won't be displayed.
- ◊ Display symptoms: When you click this button, the symptoms (fault memory entries with prefixed fault code, fault patterns) appear below the selected component/function to be tested, indented and in small font. When you click a second time, the symptoms are displayed again.
- ◊ Show/Hide: With this button, you can show or hide the documents and procedures assigned to a component/function to be tested.
- ◊ Display entire: Use this function to widen or narrow text columns. Selecting the button again restores the original status.
- ◊ Display: With this button, you start a test procedure or display an information object.



“Test plan” tab with symptoms displayed

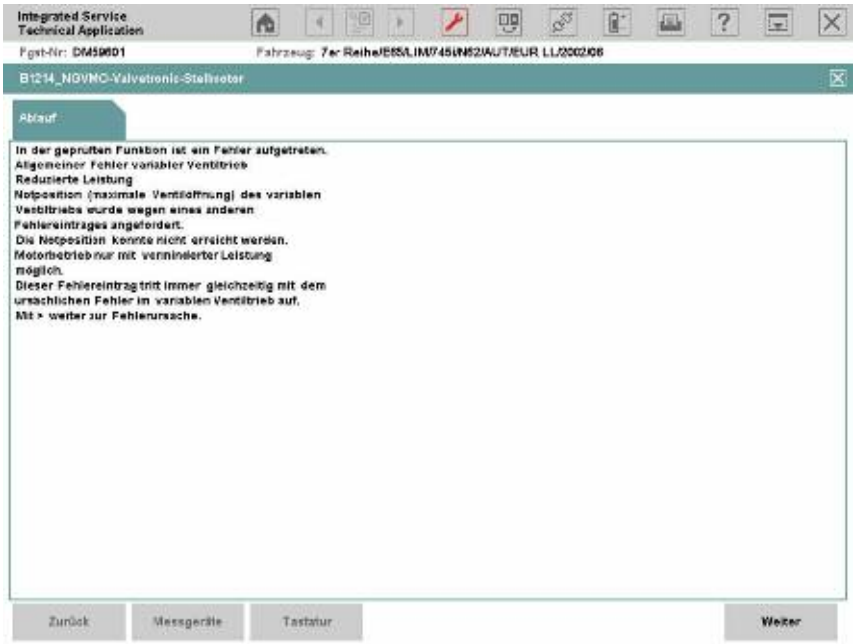
- How to start a test procedure:
  - ◊ Select a procedure (Type = “ABL”) in the content area of the “Test plan” mask.
  - ◊ Click the “Display” button.
- How to display the symptoms for a component/function to be tested:
  - ◊ Select a component/function (white lettering) to be tested in the content range of the “Test plan” mask.
  - ◊ Click the “Display symptoms” button.
- How to return to the test procedure running in the background:
  - ◊ Select the list entry with the “yellow” status in the content range of the “Test plan” mask.
  - ◊ Click the “Display” button.
- How to generally suppress the display of documents and procedures:
  - ◊ Select a component/function (white lettering) to be tested in the content range of the “Test plan” mask.
  - ◊ Click on the “Show/Hide” button.

Displaying and Editing a Procedure

A “procedure” corresponds to a service program that start and runs. A procedure may contain dialogues (messages, questions), measurement instructions and procedure steps with vehicle communication. Depending on the objective, a service program can be used to localize a fault or to execute a service function. The test steps and procedures contained in the sequence always relate to the performance of a certain task. Examples of some masks are presented below.

Message

A message provides you with information and results. Confirm the message with the “Continue” button.



Message example

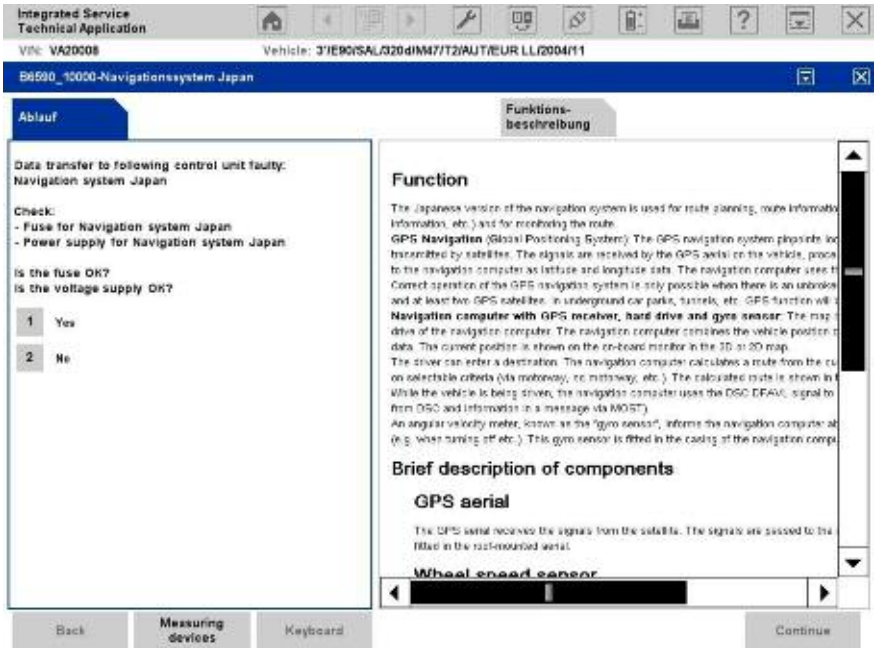
Substitute value input

A substitute value must be entered if no measuring instruments are available. In this case, you have to make the measurements with an external instrument and enter the reading into the displayed fields.

Substitute value input example

Question

A question may display information and set values. The user has to select a reply from among several options. In this case, the available options are “Yes” and “No”. When you click one of the options, the procedure continues to the next step.



Example of a question

Displaying and editing a procedure in BST mode

Procedures for the E21 - E31 Series are displayed in BST mode. These are service programs that were created for the BMW Service Tester (BST) predecessor system and that have their own mask layout. Operation in procedures in BST mode differs from general operation. Other buttons are displayed in the action bar for navigation within the BST procedures.

BST procedure (no current screenshot)

The buttons in the action line have the following functions:

- ◊ Keyboard: shows or hides the on-screen keyboard.
- ◊ Back (<): calls up the next procedure step within the BST procedure.
- ◊ Up (^): jumps to the next selection item in the screen above.
- ◊ Down (v): jumps to the next selection item in the screen below.
- ◊ Continue (>): calls up the next procedure step within the BST procedure.
- ◊ Acknowledgement (A): with this button, you can confirm your selection.

Symbol Bar

The following table provides an overview of the functions that can be directly accessed via the symbol bar.

Symbols	Function
 Start mask	When clicking this symbol, the start mask will be displayed. The ISTA workshop system then terminates the ongoing operation (after confirmation).
 Display previous document	Clicking this symbol takes you to the previous entry in the history list and displays the corresponding document. The symbol is only available if the history list contains a document which has been selected previously.
 Display document history list	When clicking this symbol, the history list will be displayed.
 Display next document	Clicking this symbol takes you to the next entry in the history list and the displays the corresponding document. The symbol is only available if the history list contains a document which has been selected previously.
 Administration	When clicking this symbol, Administration is accessed.
 Connection manager	Click on this symbol to call up the connection manager. Connections to the vehicle interface or the measuring instrument adapter can be established or disconnected. This symbol is shown (on left) as "connected" when at least one device is connected to the system. If no connections are available, it is shown as "separated" (on right).
 Operating mode	Click this symbol to display information on switching between offline and online mode. The status of the symbol reflects the present mode: online (left); offline (right).
 Status display	Click on this symbol to call up the "Status display" window. Here, the status of the connected device and, where appropriate, the battery status is displayed.
 Print	Click this symbol to access the "Print" function.

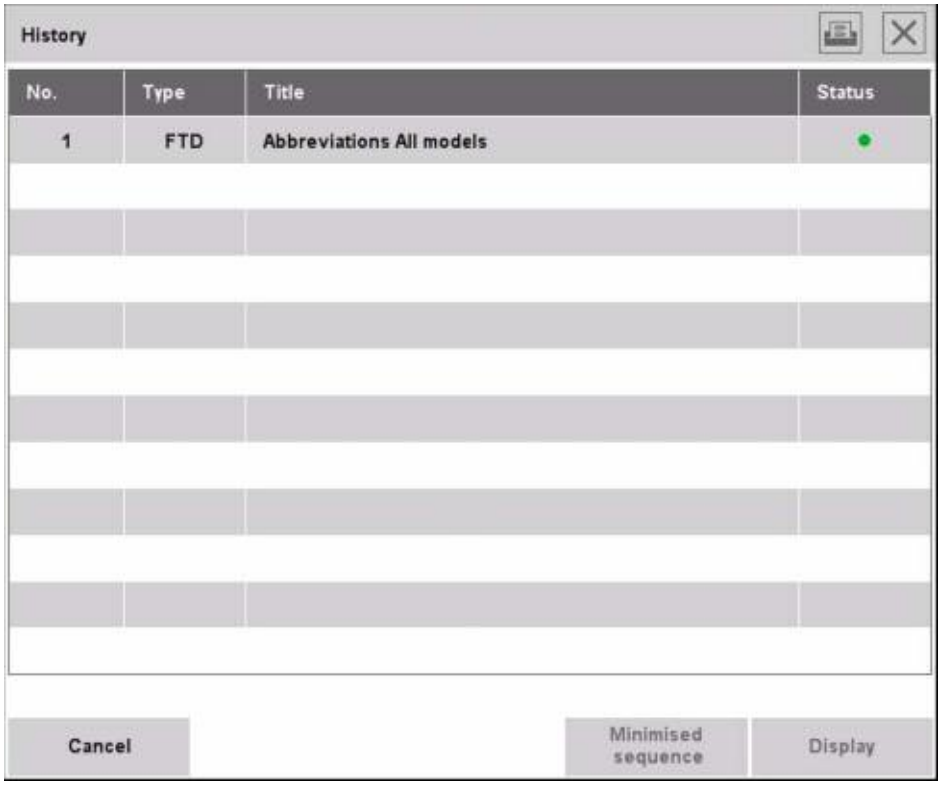
Symbols	Function
 Help	Clicking this symbol calls up the "Help" function.
 Minimize	Clicking this symbol minimizes the application window.
 Exit	When clicking this symbol, after a security prompt and the appropriate confirmation the current operation or the "ISTA" application is exited.

Start Mask

The start mask is in the home mask for the ISTA workshop system. You can obtain more detailed information on the start mask in Chapter 3.1.

History list

While performing an operation, the ISTA workshop system creates a list of all documents accessed during this operation. This list is called the history list.



The history list

The history list works on the same principle as the history function in a web browser. The list adapts to the sequence in which the documents were accessed. The most recent document always appears in the last position. With the “Display previous document” and “Display next document” symbols, you can switch between the documents that have been accessed previously. Clicking the “History list” symbol opens a pop up window in which specific entries from the history list can be selected.

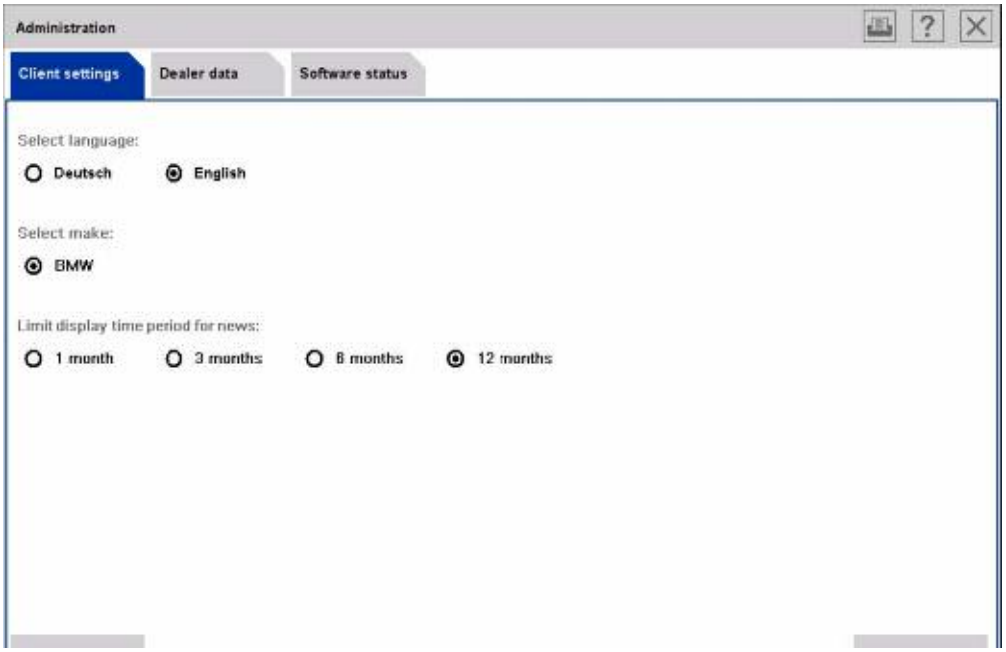
If you browse back and open another document via a hyperlink, then this new document will be added to the list after the one with the hyperlink and all entries listed below it will be deleted.

Administration

You can access “Administration” via the administration symbol in the symbol bar. You can view information on the workshop system and change the settings.

Client settings

The “Client settings” tab is displayed by default when “Administration” is opened. Here you can set the language of the workshop system, the brands for which you have authorization and the display period for news items. The selection applies to the client currently being used.



“Client settings” tab

The buttons in the action line have the following functions:

- ◊ Cancel: Closes “Administration” without changing the settings.
- ◊ OK: Closes “Administration” and saves the selected settings.

► How to select the display period for News:

◊ Under the “Limit display time period for news” menu point, specify how old the oldest news item to be displayed should be.

◊ Confirm your selection by clicking the “OK” button. The “Administration” window is closed and the workshop system returns to the most recently displayed mask. The change to the display period becomes effective the next time that you access the start mask or reboot the workshop system.

► How to select the brand(s) for which you have authorization:

◊ Click an option in the “Select brand” area.

◊ Click the “OK” button. The “Administration” window is closed. The change to the selected brand(s) becomes effective the next time that you access the start mask or reboot the workshop system.

► How to change the language of the displays in the workshop system:

◊ Click an option in the “Select language” area.

◊ Click the “OK" button. The “Administration” window is closed. The change to the language becomes effective the next time that you access the start mask or reboot the workshop system.

Language settings

The language settings vary from one country to another and are determined in agreement with the respective market and BMW headquarters.

Dealer data

When clicking the “Dealer data” tab, you can view the dealer data.

The “Security vehicles” line is only displayed if you have security vehicle authorization .

The data is centrally compiled by BMW. It is not possible to edit the dealer data in ISTA. If necessary, such changes should be carried out via the respective market organization.

“Dealer data” tab

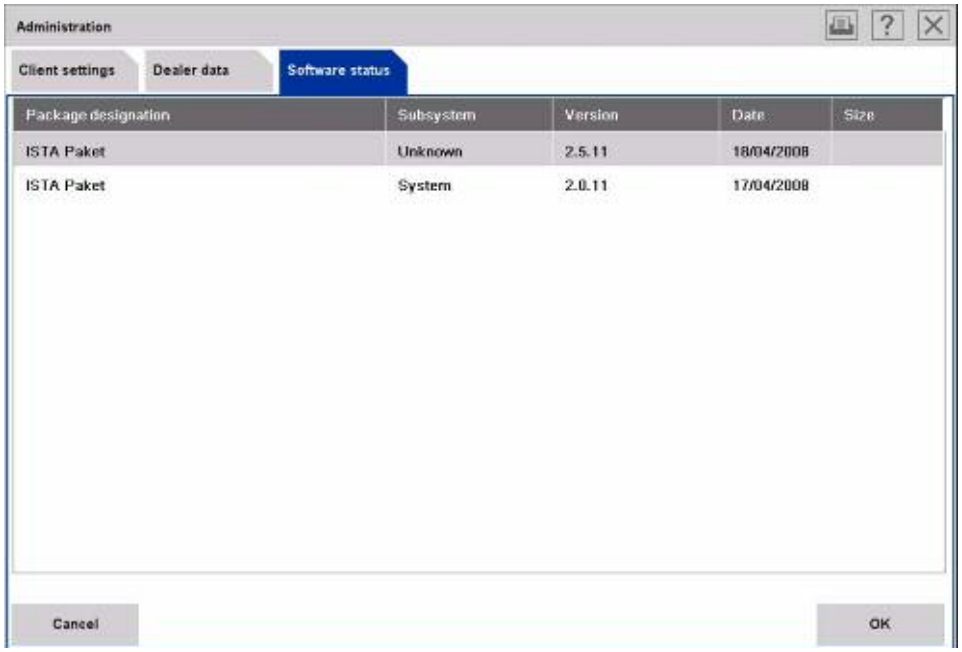
The buttons in the action line have the following functions:

◊ Cancel, OK: closes the “Administration” window.

Software status

When clicking the “Software status” tab, information on the installed software packages will be displayed. The names of the software packages, information on their contents, version number, release date and the package quantity will be shown.

The “Installed contents packages” and “Installed system packages” option fields switch the display between content/data packages and system packages.



“Software status” tab

The buttons in the action line have the following functions:

◊ Cancel, OK: closes the “Administration” window.

If the computer has been in operating mode for more than 24 hours when you click the “Software status” “Decentral/Offline” tab, then the ISTA issues a warning that no update test is possible unless a server connection is reestablished. In this case, change the operating mode and click the “Software status” tab again.

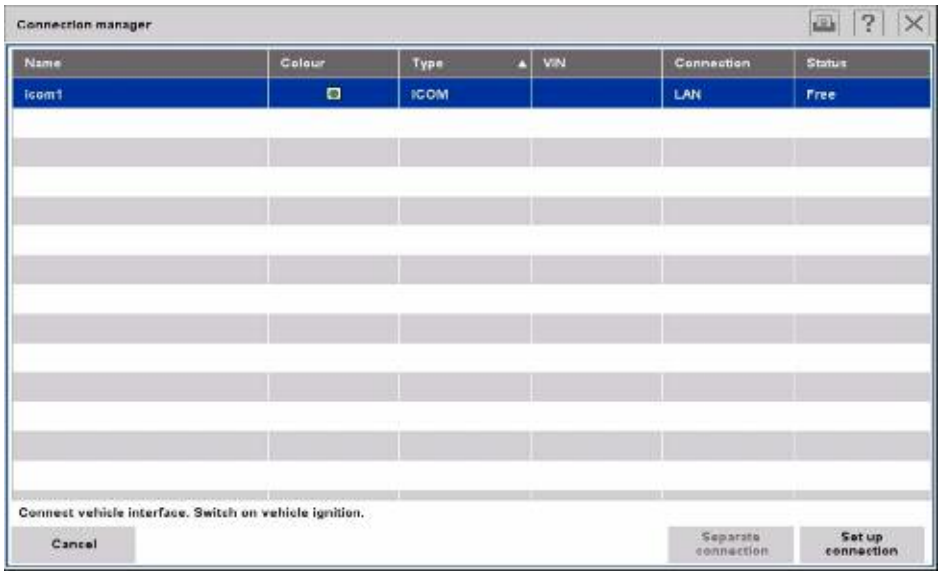
Connection Manager

If you click the “Connection manager” symbol you can independently initiate communication between the tester and vehicle (via ICOM). This function is automatically called up before communication with a vehicle is required.

The devices used in the HO workshop such as ICOM and IMIB are listed in the content range.

The individual column entries have the following meanings:

- ◊ Name: The name of the available device will be displayed.
- ◊ Color: Color coding of the device to facilitate a visual distinction.
- ◊ Type: Short description of the device.
- ◊ VIN: Shows the vehicle identification number of the vehicle connected to the respective vehicle interface.
- ◊ Connection: Shows the connection type (LAN: wire-based workshop network, WLAN: wireless workshop network)
- ◊ Status: Shows the availability of the communication device. Only those communication devices whose status is “free” are displayed. Previously reserved devices do not appear in the list.



“Connection manager” tab

► How to establish a connection between the tester and vehicle manually:

◊ Click on the “Connection manager” symbol.

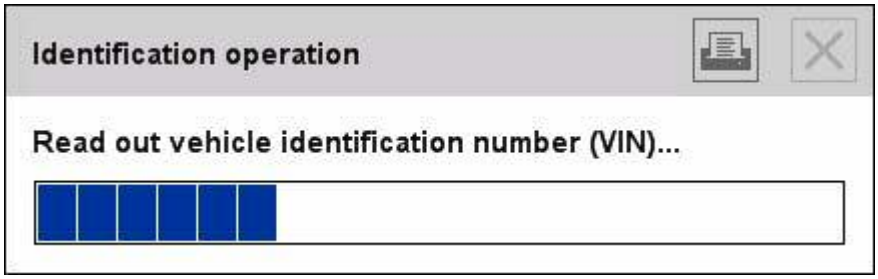
◊ Select the vehicle interface (ICOM) that is connected to the vehicle to be diagnosed.

◊ Click the “Set up connection” button. Wait until the connection is established.

◊ Create a new operation or select an existing operation from the operations list.

After the operation has been created, the “Operation details” mask will be displayed. From here you can search for information or start the vehicle test.

“Identification operation” progress bar



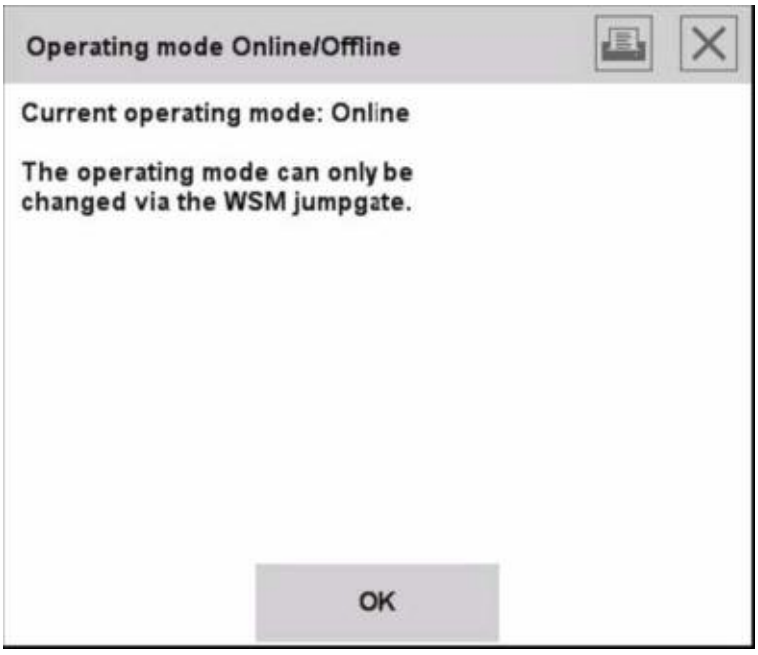
“Assignment/Generation of operation” mask

After the operation is selected, the “Operation details” mask will be displayed.

Operating Mode

A change is for example required if a test run is to be conducted with the vehicle and the tester is to be taken along for other activities, such as the display of status values. In this case, you have to switch from “Online” to “Offline”.

The operating mode switches to WSM. Only the current status of the ISTA client can be viewed and confirmed in the following pop up.



“Operating mode Online/Offline” pop up

Note: The change to the “Offline” operating mode must be effected via the WSM. If the device is simply disconnected from the workshop network, then ongoing processes such as data adjustment or updates may be terminated. This may result in indeterminable conditions on the ISID, up to and including a crash with loss of data.

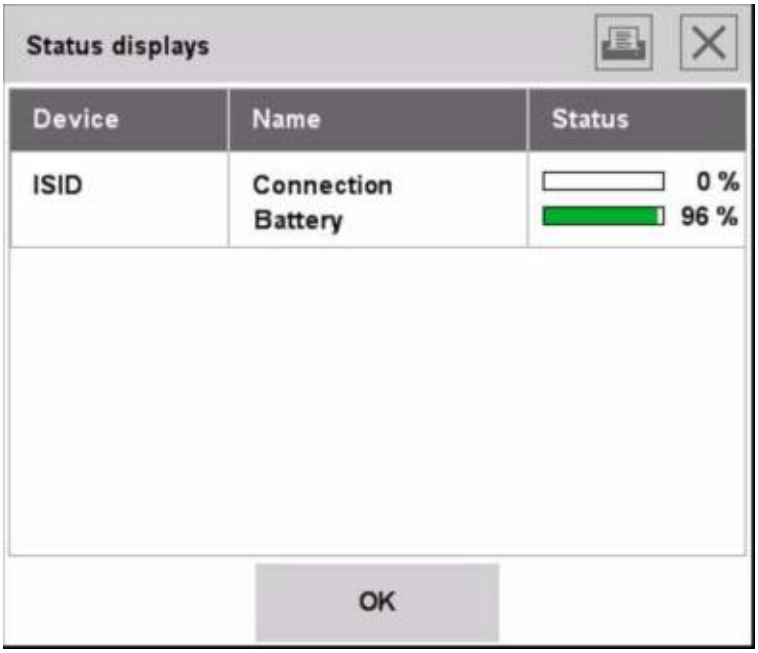
Status Display

When clicking on the “Status display” symbol, a window opens showing the status values of the connected hardware (ISID, ICOM and IMIB) as a color bar diagram with percentage display. The display includes information on the connection quality and the charge status of the batteries.

The respective bar can appear in the following colors, depending on the percentage value:

Green: > 75%, Yellow: 25% - 75%, Red (critical): < 25%

If one of the status displays enters the “critical” range, the “Status display” symbol is colored red.



“Status display” mask (without ICOM and IMIB)

Printing

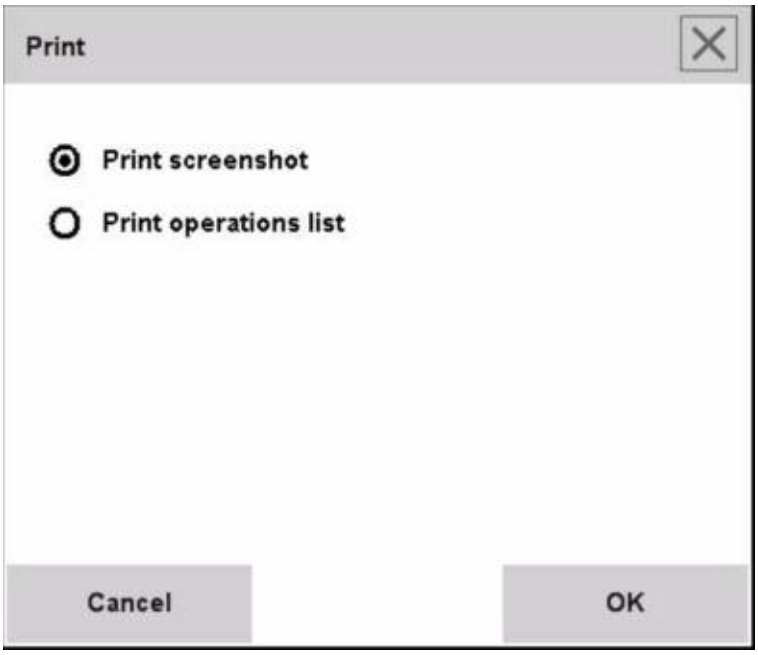
The print function is available in all masks and can be accessed via the “Print” symbol. A pop up window with selectable print options appears.

The “Print screenshot” option is available in all masks and can be used to create a print-out of the current mask. Other options depend on the displayed mask.

Examples of other print options:

- ◊ Table of contents
- ◊ List of news items
- ◊ Hit list
- ◊ Document
- ◊ Operation details

The workshop system automatically uses the standard printer defined by Windows.



“Print” window , example

Help Functions

You can access a help function via the symbol bar or via the header of a pop up window (except in the case of very small pop up windows) by clicking the help function symbol. Help provides information on screens and functions. No operating instructions are included in the help function.

The help window can cover parts of the screen. However, it never covers the symbol bar or the header. The “Help” symbol is active when the help window is displayed.

When the help function is accessed, a help text is always initially displayed that relates to the most recently displayed mask.

You can access the following other help functions from here:

- ◊ Table of contents
- ◊ List of abbreviations
- ◊ Units converter

“Help for mask” tab

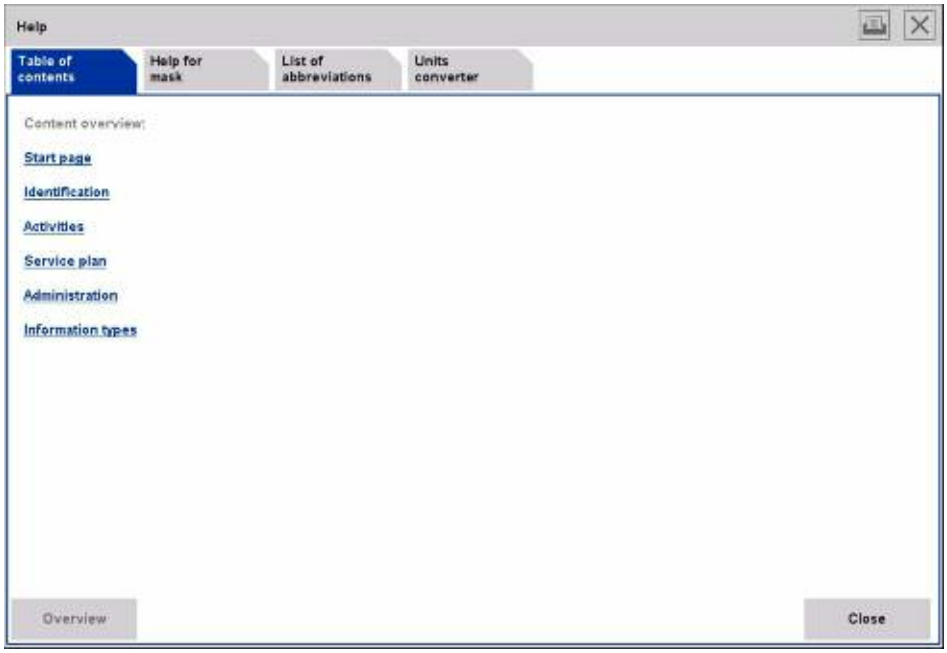
The “Help for mask” tab describes all elements (symbols, buttons, selection lists etc.) of the mask, from which help can be accessed. The “Mask” field (at the top of the content range) displays the name of the corresponding mask, e.g. “Operation details”. Under this you can select an element from the available graphic overview, e.g. “Symbol bar”. The workshop system then displays the appropriate help text. The “Overview” button is activated.

The buttons in the action line have the following functions:

- ◊ Overview: The workshop system returns from the overview of help functions to the mask.
- ◊ Close: The help window is closed.

Table of Contents

You can select the help text for all masks and screen elements of the ISTA workshop system in the table of contents.



“Table of contents” tab

► How to access a help text from the table of contents:

◊ Click one item in the “Content overview” area.

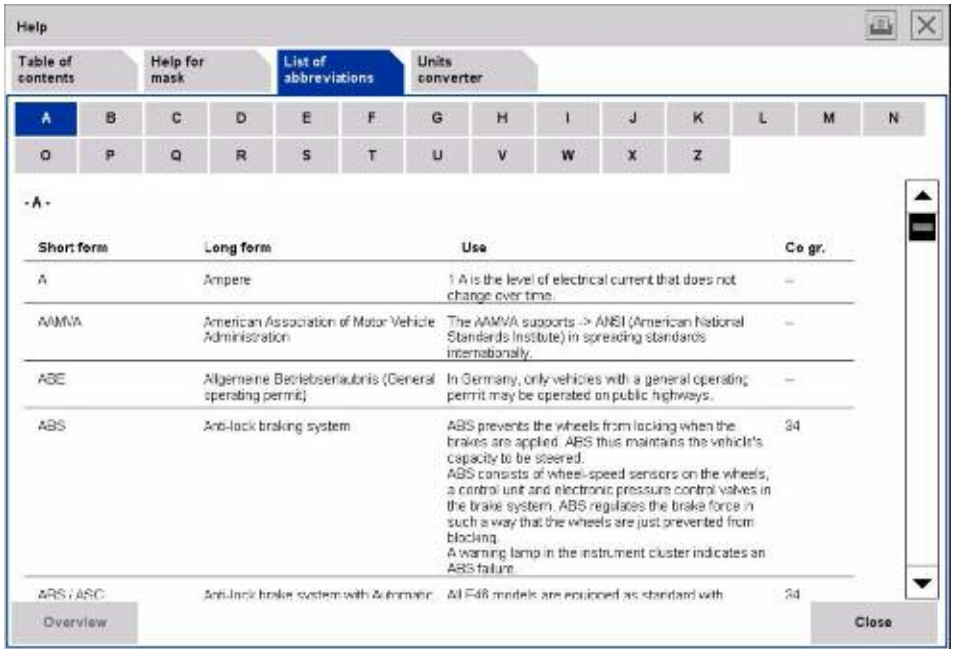
◊ Depending on the selected area, the help system may be subdivided in further subsections.

After selection, the active window shows the appropriate help text. The “Overview” button is activated.

List of Abbreviations

In the list of abbreviations, you will find alphabetically arranged explanations of all abbreviations used on the workshop system.

In the content range of the mask, the abbreviations for the selected letter will be displayed. The default is the letter “A”. If required, select another letter at the top of the content range or scroll the display down with the scroll bar. The “Overview” button is activated.



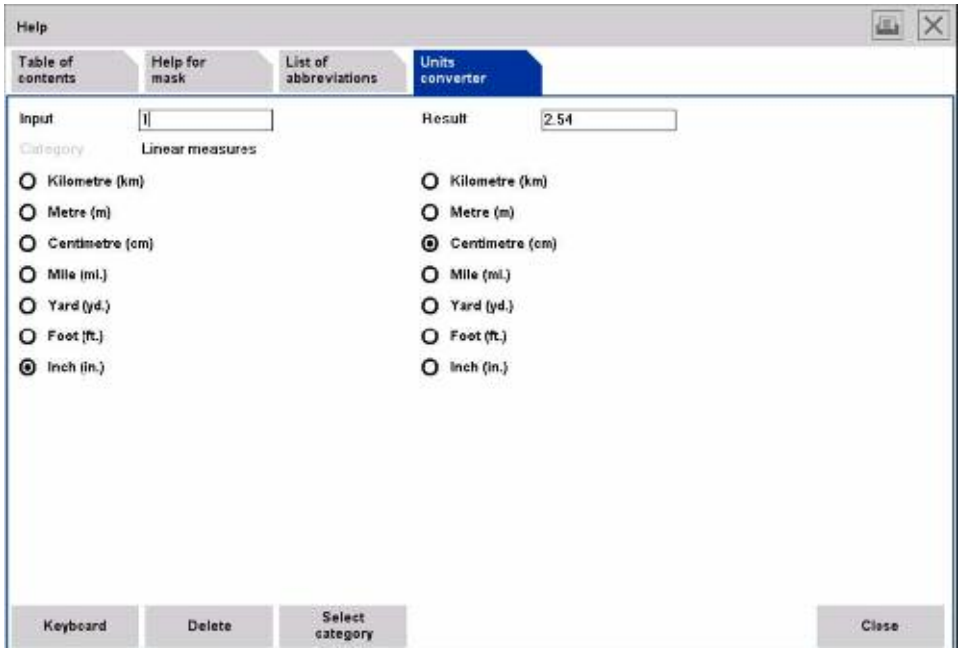
“List of abbreviations” tab

The buttons in the action line have the following functions:

- ◊ Overview: The workshop system returns to the letter “A”.
- ◊ Close: The help window is closed.

Units Converter

With the units converter, you can convert physical units for various categories (e.g. lengths, volumes, temperatures) into other appropriate unit.



“Units converter” tab

The buttons in the action line have the following functions:

- ◊ Keyboard: Shows or hides the on-screen keyboard.
- ◊ Delete: Deletes the entered value.
- ◊ Select category: Selects a unit category such as length or volume units.
- ◊ Close: The help window is closed.

► How to convert physical units:

- ◊ Click the “Select category” button. A pop up window is opened. It contains a selection list of the available categories.
- ◊ Select the required category in the pop up window. The displayed window closes. The selected category is now displayed in the content range.
- ◊ Select in the unit in the left-hand column into which you want to enter the value.
- ◊ Select the unit into which the entered value should be converted in the right-hand column.
- ◊ Enter a value in the “Input” field. If appropriate, use the on-screen keyboard. The converted value immediately appears in the “Result” field.

Minimize Workshop System

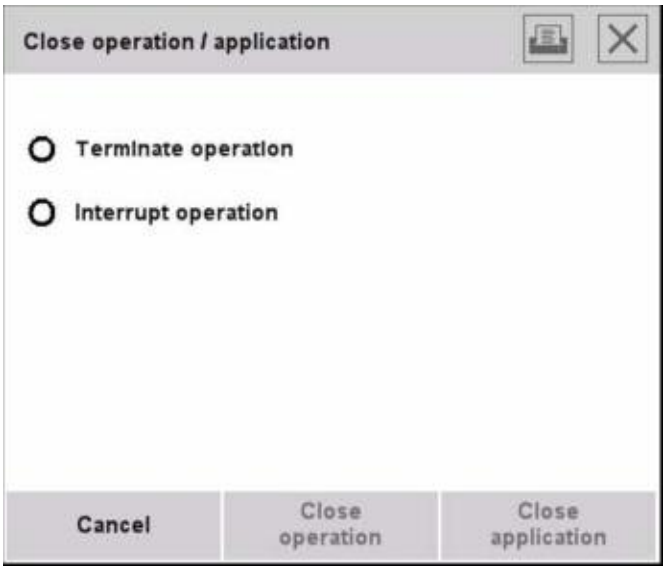
When you click the minimize symbol in the symbol bar, the ISTA Application window will be minimized. The ISTA application can be maximized again via the Windows task bar.

Procedures that are displayed in BST mode cannot be minimized.

Close Operation/application

You have various options for closing or interrupting an operation:

- ◊ Click the “Start mask” symbol in the symbol bar.
- ◊ Access the “Identification” main menu and begin a new operation by selecting the “Vehicle selection” item in the submenu
- ◊ Click “X” (Exit) in the symbol bar. In this case, a pop up appears in which you can select whether to exit the operation or the ISTA Application.



“Close operation/application” mask

► How to exit the ongoing operation:

- ◊ Click the “X” in the symbol bar. ISTA will prompt a security note.
- ◊ Select the “Terminate operation” option and click the “Close operation” button to return to the start mask; or
- ◊ Select “Close application” to close the ISTA workshop system; or
- ◊ Select “Cancel” to continue the current operation.

When exiting the operation, the workshop system switches back to the start mask from where a new identification procedure can be started.

► How to interrupt the ongoing operation:

◊ Click the “X” in the symbol bar. ISTA will prompt a security note.

◊ Select the “Interrupt operation” option and click the “Close operation” button to return to the start mask; or

◊ Select “Close application” to close the ISTA workshop system; or

◊ Select “Cancel” to continue the current operation.

When exiting the operation, the workshop system switches back to the start mask from where you can start a new vehicle identification operation. You can open the interrupted operation over the next 14 days from the operations list. It will then be set to the “terminated” status and no longer appears in the list.

If you want to display terminated operations in the list, you can change the filter settings accordingly.

Operations

All data generated during a vehicle's stay in the workshop are compiled in an operation. These are identification, vehicle and work data.

An operation is always linked to a specific vehicle by vehicle identification via the VIN. It accompanies the vehicle from the initial identification via the vehicle test, through the diagnosis performed in the workshop and the info search for the repairs, to the conclusion of the repair and service work. Within an operation, the ISTA only provides information for the identified vehicle.

Procedures can be terminated or interrupted and continued within a certain period. An operation may also be continued on a different device and even in another language. An ISTA client can, however, only ever process one operation at a time.

Creating an Operation

There are several ways to create a new operation. The procedures depend on how the vehicle has been identified.

Identification via operations list

If you use the operations list to select an operation whose status is set to “in progress”, then the workshop system copies it after a security check into a new “parallel operation” that it then opens. The parallel operation does not contain the log data of the initial operation. If the status of the selected operation is “terminated”, however, then the workshop system opens it directly.

Multiple simultaneous access to the vehicle is automatically prevented.

Identification via VIN Entry

If a VIN has been entered and the workshop system finds an operation record with the same VIN, then it opens the record directly or copies the contents of it into a parallel operation, depending on the status.

If several operations are available for the same VIN, then the “Assignment/generation of operation” mask appears first. In this mask, you can select and open an existing operation or create a completely new operation.

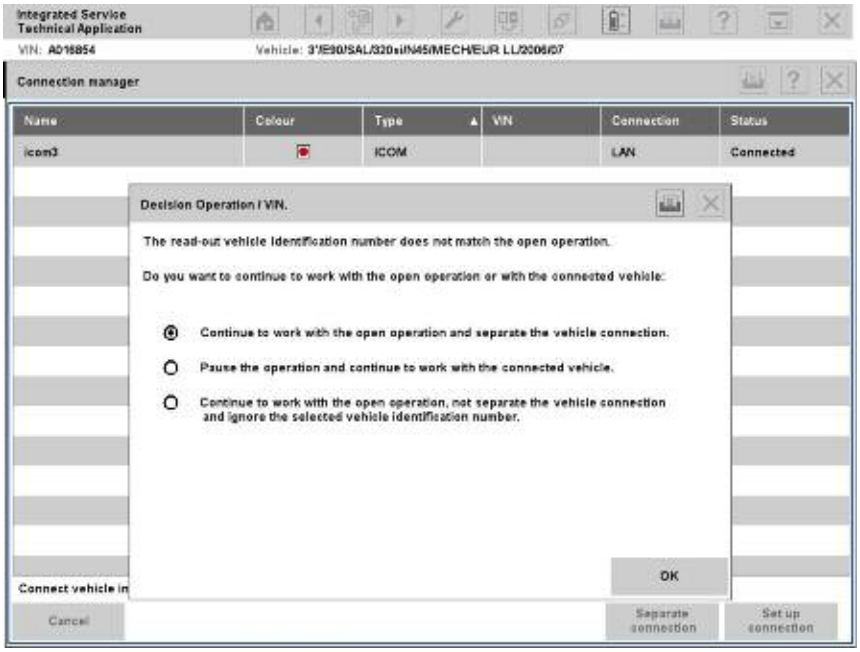
Vehicle Identification by Reading Out Vehicle Data

The workshop system reads out the vehicle data and searches as previously described for a matching existing operation. If it does not find such an operation, it automatically creates a new one.

When the “Read out vehicle data” mask is open, the “Decision Operation/VIN” pop up may also appear

When an operation is open, you can read out the VIN directly from the vehicle via the connection manager. The workshop system checks whether the open operation matches the vehicle identification.

If this does not apply, the following pop up appears:



“Decision Operation/VIN” pop up

Continue with the open operation and separating vehicle connection:

Select this option if for example you wish to carry out an information search with the existing operation and associated vehicle ID number to which the connected vehicle does not belong. In this case, the workshop system separates the communication link to the vehicle in order to prevent data conflicts.

Interrupt operation and continue work with connected vehicle:

Select this option if you have selected the wrong operation or have not yet closed a previous operation.

Continue with the open operation, maintain vehicle connection and ignore read out VIN:

Select this option if you have removed the control module in which the VIN is stored from a donor vehicle and installed it in the vehicle to be diagnosed. In this case, the workshop system reads out the VIN of the donor vehicle.

Vehicle Identification via Basic Features

After the input of the basic features, the workshop system searches for match operations in the operations list. If one or more hits are returned, then the “Assignment/Generation of operation” dialogue appears. In this mask, you can select and open an existing operation and open or create a new operation. The dialogue does not appear if the selected basic feature combination does not appear in the operations. In this case, a new operation is automatically created.

“Assignment/generation of operation” dialogue

On completion of the vehicle test, the VIN is automatically made available and is retroactively stored in the operation. The next time the operation is opened via basic features, it will also be displayed.

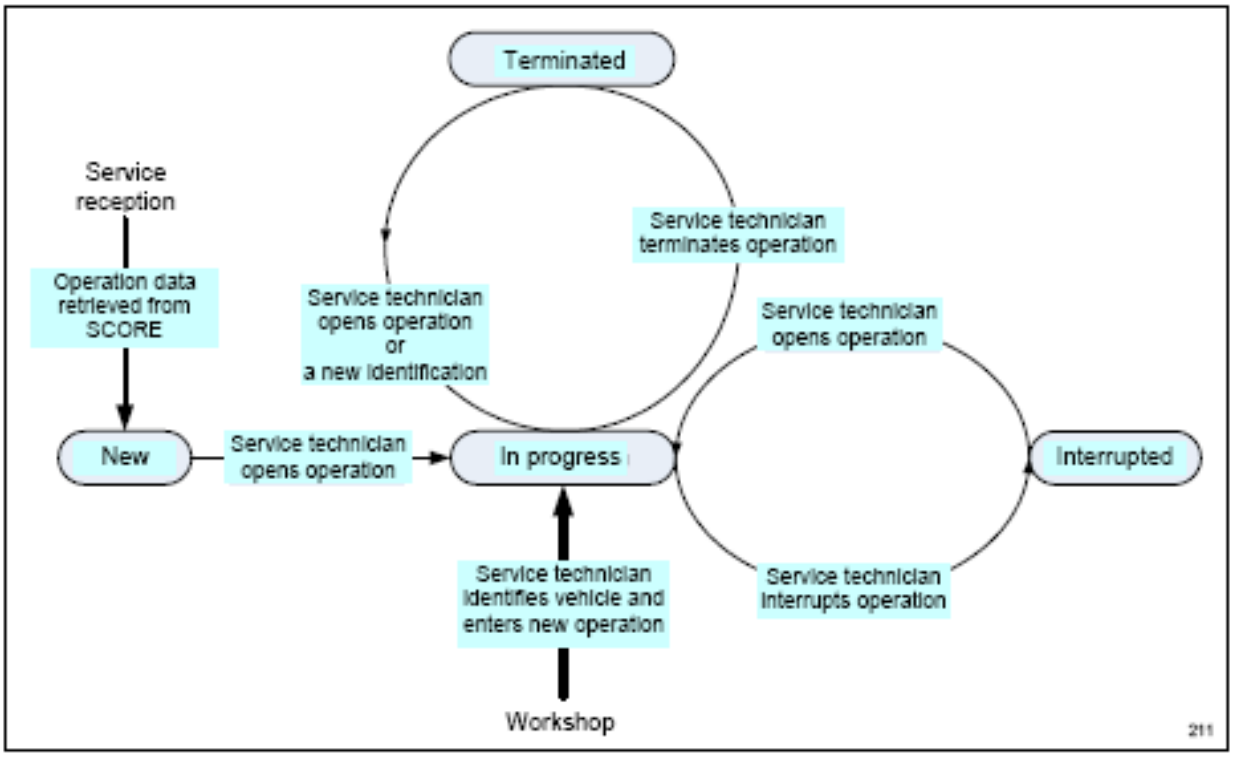
Identification in “TeleServices” Operating Mode

A new operation is always created here. The “TeleServices” operating mode can only be accessed via the “ISPA” application. When the ISTA Client is closed in the “TeleServices” operating mode, the operation is automatically set to the “Terminated” status.

Statuses

An ISTA operation can adopt the following statuses:

- New
- In progress
- Interrupted
- Terminated



Conditions of an operation

New

An operation has the “New” status, if the job creation is completed in ISPA (service advice) and the operation has not yet been opened in the ISTA workshop system.

If an operation is automatically created on an ISTA client as part of a vehicle identification, although this initially has the “New” status, it then switches to the “In progress” status. You cannot interfere with this change. A new operation is only created if the vehicle to be identified cannot be unambiguously assigned to any operations present in the existing operations list. If a matching entry appears in the operations list, a pop up appears (See below).

In progress

An operation has the “In progress” status for as long as it is in process. In the meantime it is not possible to view the operations list, unless you use a second ISTA client. If you do not have this option, you will have to close the existing operation after vehicle identification before you can switch to the “Operations list”. You will see this concluded operation with the “Interrupted” or “Terminated” status (depending on the selected option).

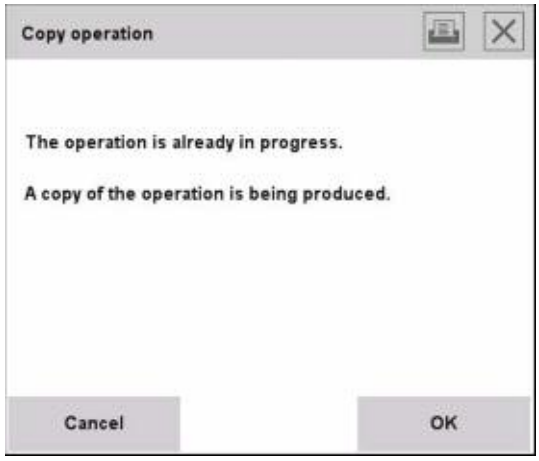
From the operations list you can select an operation with the “In progress” status. In this case, the workshop system creates a copy of the original operation.

Copy of an operation or parallel operation

An “In progress” operation can be opened from the operations list on a second ISTA client or workshop PC. The following pop up appears:

A copy of an existing operation can also be created and opened, for example to carry out information searches. After the “OK” button is clicked, the “Operation details" mask will be displayed.

A parallel operation is a copy of the existing operation without its expiration dates and has all the same rights. A new identification is not required. Once vehicle communication is established, the VIN will be in any case reread and compared to the original VIN. If there is a disparity, a pop up will appear.

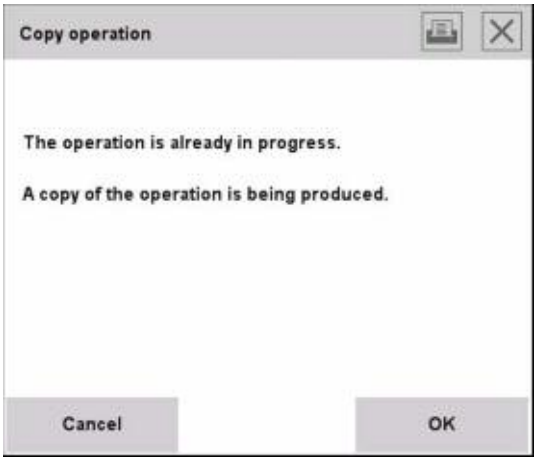


“Copy operation” pop up

Interrupted

The “Interrupted” status is set if “Interrupted” has been selected when closing the operation.

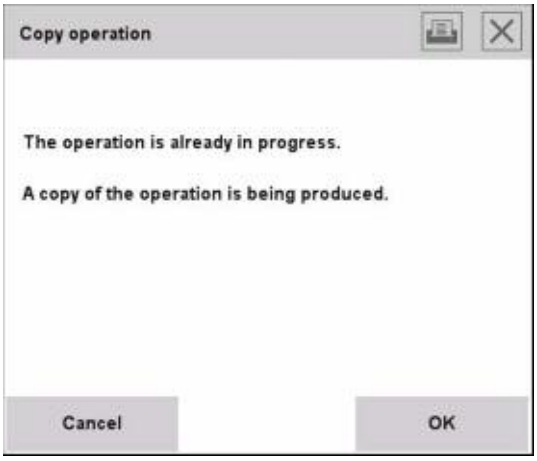
An interrupted operation can be reset to the “In progress” status if you select it from the operations list and execute other functions in the open operation. The operation can continue to use the data obtained before the pause.



Terminated

An operation is terminated if “Terminated” has been selected when closing the operation.

A terminated operation can be reset to the “In progress” status if you select it from the operations list or identify the respective vehicle from the start. This may be necessary, for example, if there are further customer complaints or the repair was not successful. In this case, the ISTA workshop system inquires whether the terminated operation should be reopened or whether a new operation should be created:



“Open/create operation” pop up

Re-open terminated operation

A terminated operation will be opened, using the respective sequence data.
The operations report will be continued.

Applications:

- ◊ The repair was unsuccessful
- ◊ There are new customer complaints

Operations with “Terminated” status are not displayed in the operations list by default. If you wish to select these operations in the list, you can change the filter settings for the operations list.

New operation to be created and opened

Use this option if the current operation no longer has anything in common with the old (selected) one either in technical or chronological terms. The workshop system copies the selected operation. A new operations report will be created, however, and the original procedure data will not be used.

Simultaneous access to an ISTA operation

An operation cannot simultaneously be processed by several service technicians. A complete copy of the operation is created so that several service technicians can work on the same operation simultaneously.

Time-dependent status change

The time after the operations are removed from the operations list depends on the operation status. The “New” and “In progress” statuses are automatically replaced after 7 days with the “Terminated” status. The “Interrupted” status is set to the “Terminated” status after 14 days. Terminated operations are only displayed in the operations list if a filter has been set correspondingly. They can be reedited from this list. Operations with the “Terminated” status are completely deleted from the operations list only after 14 days (exception: if there is a very large number of operations and the reserved memory range on the ISIS is exhausted, then the oldest operations with the “Terminated” status will be deleted before the 14-day period expires.

Workshop PC

The operation and its protocol data are always available on the workshop server. The PC is only used in online mode.

ISID in offline mode

If you have to switch to the offline mode with the ISID, any open operation must first be interrupted or terminated. This operation will then be transferred to the ISID when you change over to offline operation. This operation is set to the “In progress” status on the ISIS and therefore cannot be simultaneously edited by another user.

You can edit other vehicles in offline mode. In this case, the operations and the associated protocol data are initially generated and saved locally on the ISID. When the device goes online again, it is resynchronized with the workshop server.

TeleServices

As far as the user is concerned there is only one possible operation in the “TeleServices” mode. The “Operations list” tab is not available. Operations are automatically created and terminated and will be invisible from the user's point of view. It is not possible to pause. As is usual for all procedures, logs are generated for the FBM.

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Terminating an operation

You can close an operation with the following actions:

- ◊ Exiting the application
- ◊ Identifying another vehicle
  (Operations list, VIN, Read out vehicle data, Basic features)
- ◊ Calling up the start mask

Scope of Functions for Operator Devices

Menu	Tele Service	PC workshop online	ISID online	ISID offline
3.1 Start mask				
3.2 Identification				
3.2.1 Vehicle selection				
3.2.1.1 Operations list	-	x	x	x
3.2.1.2 Vehicle identification number	-	x	x	x
3.2.1.3 Reading out vehicle data	-	-	x	x
3.2.1.4 Basic features	-	x	x	x
3.2.2 Operation information				
3.2.2.1 Operation details	x	x	x	x
3.2.2.2 Vehicle details	x	x	x	x
3.2.2.3 Repair history	x	x	x	x
3.2.2.4 Operations report	x	x	x	x
3.3 Vehicle test				
3.3.1 Control unit tree	x	-	x	x
Control unit functions	x	-	x	x
Identification	x	-	x	x
Diagnostic query	x	-	x	x
Component activation	-	-	x	x
3.3.2 Control unit list	x	-	x	x
Control unit functions	x	-	x	x
Identification	x	-	x	x
Diagnostic query	x	-	x	x
Component activation	-	-	x	x
3.4 Activities				
3.4.1 Information search				
3.4.1.1 Product structure	x	x	x	x
3.4.1.2 Function structure	x	x	x	x
3.4.1.3 Components and signals	x	x	x	x
3.4.1.4 Text search	x	x	x	x
3.4.2 Guided troubleshooting				
Detail table	x	-	x	x
Quick delete	x	-	x	x
3.4.2.1 Fault memory	(x)	-	x	x
3.4.2.2 Fault pattern	x	x	x	x

Scope of Functions for Operator Devices (Cont.)

Menu	Tele Service	PC workshop online	ISID online	ISID offline
3.4.3 Service function				
3.4.3.1 Service functions	x	-	x	x
3.4.4 Workshop/Operating fluids				
3.4.4.1 Workshop equipment	x	-	x	x
3.4.4.2 Operating fluids	x	-	x	x
3.4.4.3 Text search	x	-	x	x
3.4.5 Measuring instruments				
3.4.5.1 Multimeter	-	-	x	x
3.4.5.2 Oscilloscope	-	-	x	x
3.4.5.3 Signals	-	-	x	x
3.5 Service plan				
3.5.1 Hit list	x	x	x	x
3.5.2 Test plan	(x)	-	x	x
3.6 Symbol bar				
3.6.1 Start mask	-	x	x	x
3.6.2 Information object forward/History/Back	x	x	x	x
3.6.3 Administration	x	x	x	x
3.6.4 Connection manager	-	-	x	x
3.6.6Status display	-	-	x	x
3.6.7 Print	x	x	x	x
3.6.8Help	x	x	x	x
3.6.9 Minimize/Maximize	x	x	x	x
3.6.10 Close operation	x	x	x	x

"x" available, "(x)" restricted availability, "-": not available

Abbreviations

Term	Explanation
BST	BMW Service Tester (former BMW diagnostics system)
DIS	Diagnostic and information system
FBM	Vehicle description module (repair history and vehicle details)
VIN	Vehicle identification number (VIN)
GSM	Global System for Mobile Communication
GT1	Group Tester 1
HO	Dealer organization
HTML	Hypertext Markup Language
ICOM	Integrated Communication Optical Module
IMIB	Integrated Measurement Interface Box
ISAP	Integrated Service Access Point
ISPA	Integrated Service Processes Application
ISTA	Integrated Service Technical Application
IDES	Integrated diagnosis development system
ISID	Integrated Service Information Display
ISIS	Integrated Service Information Server
LAN	Local Area Network
OBD	On-Board Diagnostics
OSS	Online Service System
PC	Personal Computer
PDF	Portable Document Format
pdm	Predefined diagnostic messages
ECU	Electronic Control Unit
SoWu	Individual equipment for vehicle details
SVG	Scalable Vector Graphics
TA-DB	Technical Actions - Database
TSSB	TeleServices Switch Board (not available in several markets)
VIN	Vehicle Identification Number
WLAN	Wireless Local Area Network
WSM	Workshop system management
XML	Extensible Markup Language

Glossary

Term	Explanation
Administration	Shows and facilitates general settings; shows dealer data and the installed versions of the content and system packages.
Operating mode	The operating mode designates the application options for ISTA.
BST mode	The BST mode is the name of the mode of the predecessor system for the E21 - E31 Series. The associated diagnostic software has been imported to ISTA. It can also be recognized on an ISTA client by the different lay-out of the masks.
Client	In this context, a client is an ISTA program section on an operator device (in this case, ISID or workshop PC). It operates according to the client-server system and communicates with ISTA server components (software) located on the server (hardware).
pdm result	As part of the TeleServices a vehicle transmits diagnostic data that is compiled in an XML file and transmitted to the TSSB. In addition to the VIN, the file contains a list of the fault memory entries for all control devices.
Vehicle identification	Contains all functions that are required for vehicle identification via input of a VIN (vehicle identification number), by reading out the VIN from the vehicle, via selection of basic features or vehicle selection from an operations list.
Vehicle test	Contains all functions that are required for performance and display of the vehicle test. In the vehicle test the status of the installed control devices is determined and graphically presented.
Fault pattern selection	The identified diagnostic symptoms can be selected via the fault patterns.
Information display	Contains all functions that, as a result of an information search, deliver and display a document.
Information search	Contains all functions that, as a result of a query, deliver and display a hit list.
Installation/ Update	Installs and updates the content and system packets in conjunction with other components (WSM, JETstream).
JET stream	System for controlling installations and updates on ISIS.
Measuring instruments	Measurement and signal functions are made available via the measuring instruments. The measuring functions are, on the one hand, intended to measure current, voltage etc., in the vehicle, and on the other, to generate signals. Usually additional auxiliaries are required before measuring instruments can be used such as adapters, for example. The measuring instruments are used by instructions from a test program. Furthermore, the user can also use measuring and signal functions independently of a test sequence in the “manually controlled measuring instruments” mode. In this case, the user must make all settings and evaluations himself.
Test plan	The test plan provides a test proposal with the optimum sequence of test objects for selection on the basis of the fault statuses read out from the vehicle and the optionally selected fault patterns.
ISPA	Support system for service consultation. May not be used in all markets.
ISPA Broker	Interface service for checking data from BMW headquarters, e.g. technical actions. This service is always available. It does not depend on installation of ISPA..
Control unit functions	With the aid of the control unit functions, individual control units can be identified, interrogated and actuated.
Operations	All work on one vehicle is compiled under one operation. Operations can be created, interrupted, terminated and reported.
WSM	The Workshop System Management (WSM) helps to administer ISIS. This is where all administrative tasks are performed.

Fault Messages and Fault Rectification

If a function cannot be performed due to a fault, a pop up with a fault message is displayed. If this pop up is displayed, please proceed as follows:

◊ Execute the desired function again.

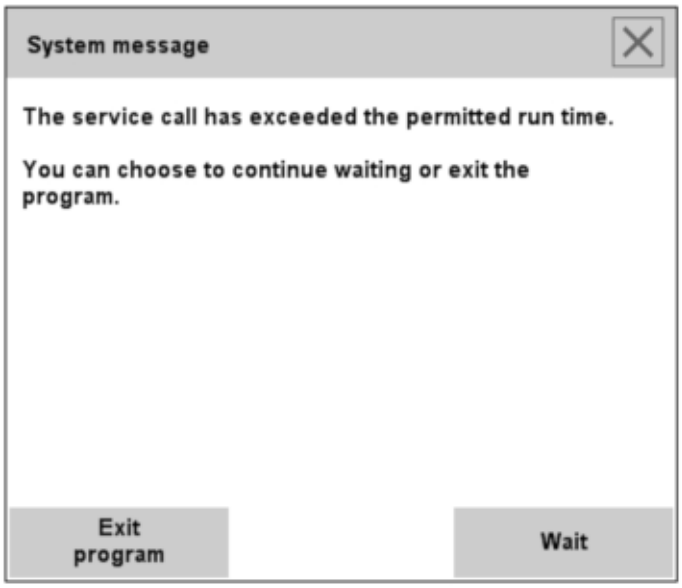
◊ If a fault message is issued again, please note the displayed fault code and contact your local administrator. He will initiate suitable measures or send a message (via WSM) to Support.

If you find faults in an information object in terms of content or technical details, please also report this fault to support (via WSM). Examples of such faults can be a missing description in a set of repair instructions, incorrect wire color in the wiring diagram, or a graphic showing the place of installation that does not correspond to the vehicle in question or a similar one, for example.

You can obtain a description of the procedure for reporting faults in the WSM documents.

If the system needs more than approximately 10 seconds to execute a function, then a progress bar is displayed. With longer process times, the following pop up with options may be displayed:

System message



This is not a fault. The message signals that the execution of the function is ongoing. You can continue the action by selecting “Wait” or close the program with “Exit program”. If no entry is made when a pop up appears, then the operation continues running in the background.

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